STATE HIGHWAY PROGRAM
CONSTRUCTION PLANS 9-12-59
COMM. ANTHONY D. DI NATALE

MASS.

MASS. DEPT. of PUBLIC WORKS
Report of Sept. 12, 1959
Commissioner Anthony D. DiNatale

a

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to

Governor

FOSTER FURCOLO

OF THE

MASSACHUSETTS HIGHWAY PROGRAM

AND

OTHER DEPARTMENT ACTIVITIES

SEPTEMBER 12, 1959

MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
ANTHONY N. DiNATALE, Commissioner

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COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
Anthony N. DiNatale, Commissioner

A Report to

GOVERNOR
FOSTER FURCOLO

on the

MASSACHUSETTS HIGHWAY PROGRAM
AND
OTHER DEPARTMENT ACTIVITIES

September 12, 1959

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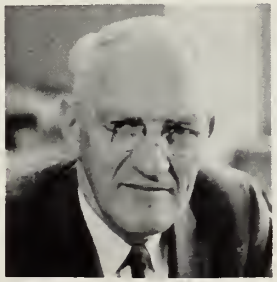
HIS EXCELLENCY FOSTER FURCOLO
Governor

ANTHONY N. DiNATALE
Commissioner

GEORGE C. TOUMPOURAS
Associate Commissioner



FRED B. DOLE
Associate Commissioner

JACK P. RICCIARDI
Deputy Commissioner

EDWARD J. McCARTHY
Chief Engineer

The Commonwealth of Massachusetts
Department of Public Works
Office of the Commissioner
100 Nashua Street, Boston 14

September 12, 1959

To His Excellency Foster Furcolo
Governor of the Commonwealth

Your Excellency:

It is my proud privilege to report the progress and activities of the Massachusetts Department of Public Works.

Our highway construction program made great strides during this time and the Department's Waterways Division likewise successfully carried out a large program of construction.

It is a pleasure for me to express my sincere appreciation your Excellency, for the unfailing support I have received.

I wish also to thank the personnel of the Massachusetts Department of Public Works for the excellent performance of their duties in expediting this vast program.

Respectfully submitted,

A. N. DiNatale

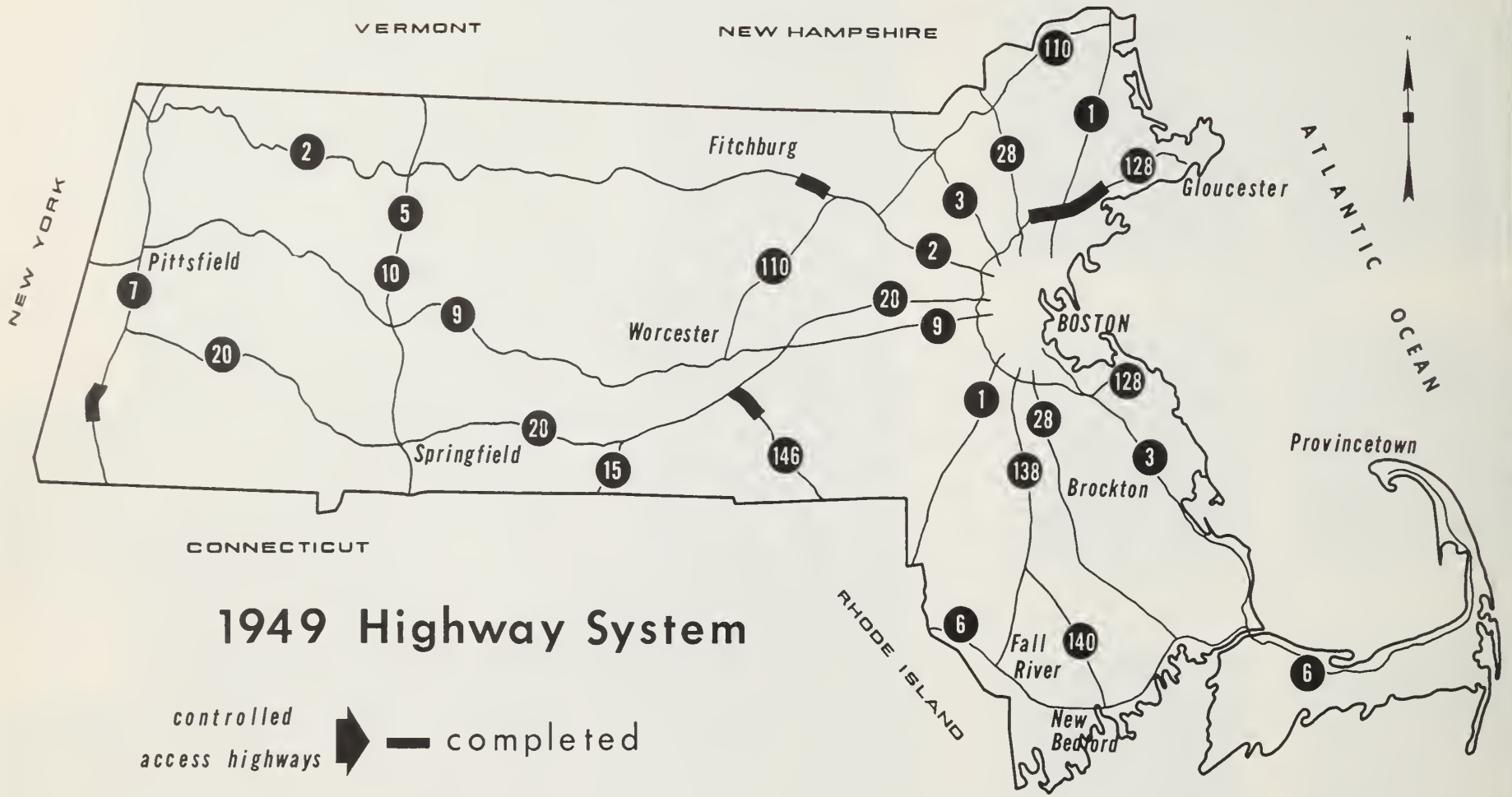
ANTHONY N. DiNATALE
Commissioner

AND:L

RODOLPHE G. BESSETTE
Director, Division of Waterways

PATRICK F. COX
Deputy Chief Engineer

10 YEARS OF HIGHWAY

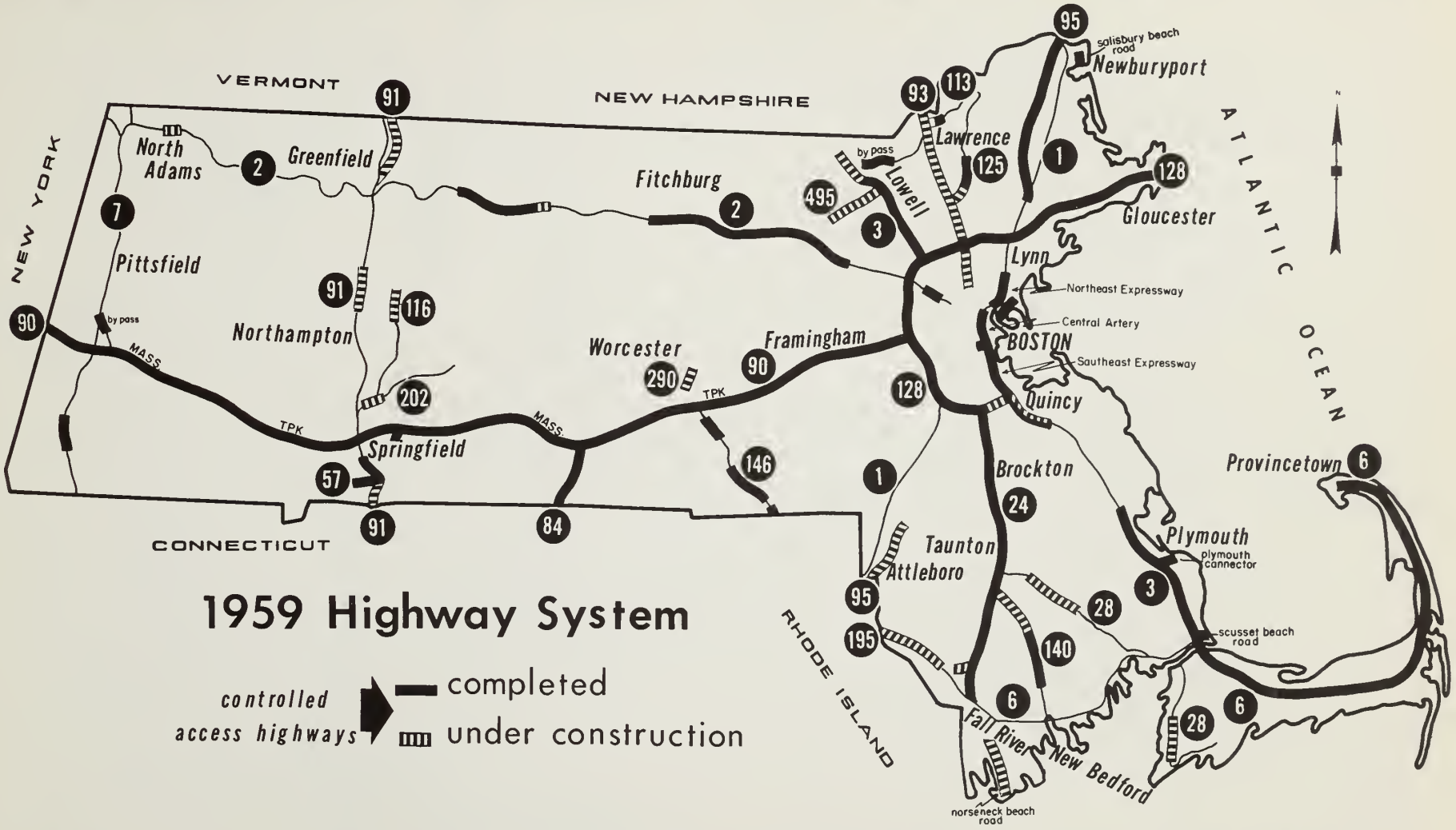


1949 Highway System

controlled access highways — completed

THE CONTROLLED ACCESS HIGHWAY SYSTEM IN 1949 COMPRISED 14.6 MILES

ADVANCEMENT IN MASSACHUSETTS !



NOW - THE CONTROLLED ACCESS HIGHWAY SYSTEM COMPRISES 453.5 COMPLETED MILES WITH AN ADDITIONAL 108.1 MILES UNDER CONSTRUCTION

CONNECTICUT
MAINE
MASSACHUSETTS
NEW HAMPSHIRE
NEW JERSEY
NEW YORK
RHODE ISLAND
VERMONT

U. S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
REGION ONE 1705 U. S. Post Office and Court House
Boston 9, Massachusetts

Progress of Federal Aid Program August 19, 1959

Mr. A. N. DiNatale
Commissioner
Department of Public Works
Boston 14, Massachusetts

Dear Commissioner DiNatale:

It is again a pleasure to report to you on the progress that the Massachusetts Department of Public Works has made in the utilization of Federal highway funds.

On July 1, 1958, 29% of the 1959 Interstate funds had been obligated. Now, a year later, the remainder of the 1959 funds has been obligated as well as 49% of the 1960 fiscal year funds. Since these latter funds were not made available until August 1, 1958, this represents excellent progress.

Since the allocation of Interstate funds increased from $46,746,004 in 1959 to $69,276,875 in 1960, a very significant increase in rate of obligation has taken place. Using the amount of the 1959 allotment as a goal, the Department surpassed their mark by obligating $70,891,000 or 152% of the target amount. This compares most favorably with the preceding year when $39,130,000 was obligated or 108% of that year's goal. Expressed in other words, Massachusetts obligated 180% more Interstate funds this fiscal year than last.

The obligation of ABC funds in fiscal year 1959, $11,129,000 did not equal the record total of $26,022,000 established in 1958. It should be remembered, however, that in this period $7,147,000 of the anti-recession or so-called "D" funds were obligated.

Overall, therefore, Massachusetts obligated $89,137,000 of Federal funds in the fiscal year 1959. The goal of $70,307,000, the allocation to the State, has been exceeded with a mark of 127%.

I wish to compliment you on this enviable record and at the same time to thank you for the wonderful cooperation the Bureau of Public Roads has received from your Department in our joint highway endeavor.

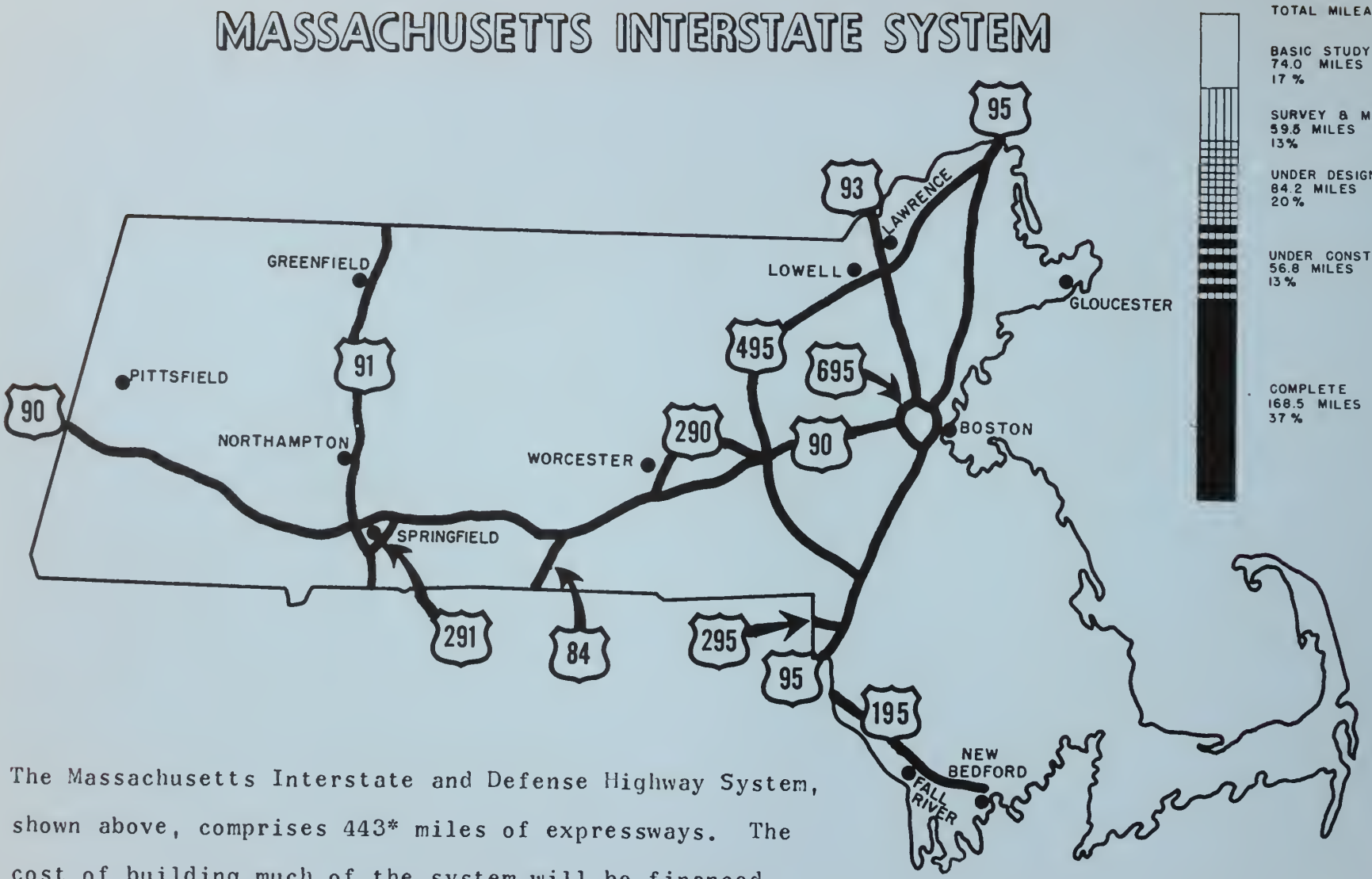
Very truly yours,

Charles E. Hall

Charles E. Hall
Division Engineer

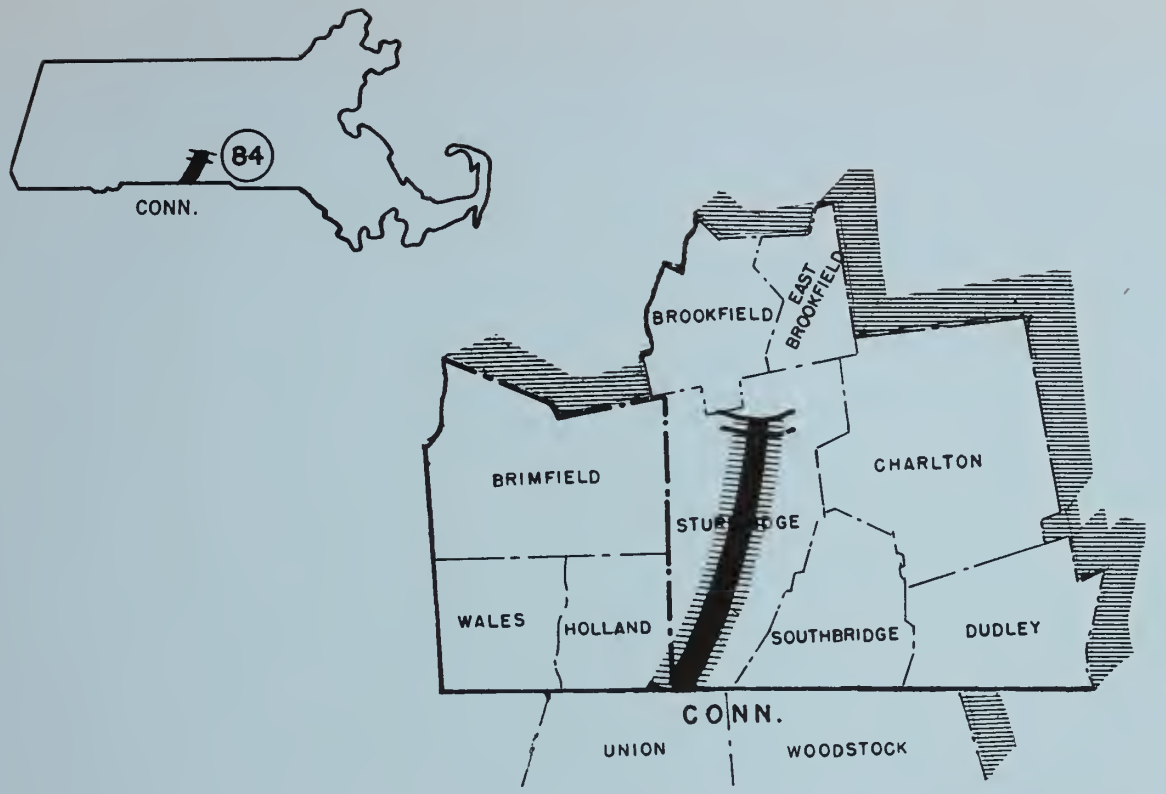
The Interstate Highway System

MASSACHUSETTS INTERSTATE SYSTEM

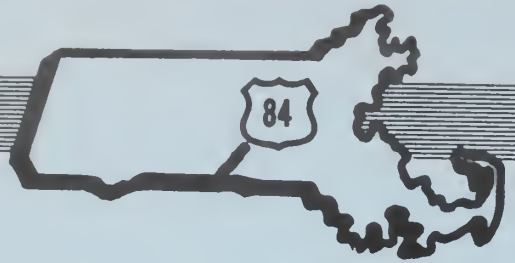


The Massachusetts Interstate and Defense Highway System, shown above, comprises 443* miles of expressways. The cost of building much of the system will be financed 90% by the Federal Government and 10% by the State. Details of each route are outlined in the following pages.

*Includes 123 miles of Interstate Route 90 constructed and controlled by the Massachusetts Turnpike Authority.



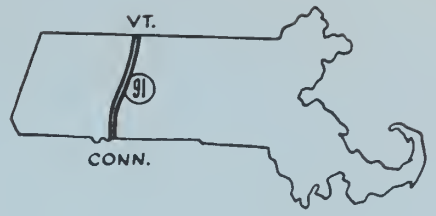
INTERSTATE 84



INTERSTATE ROUTE 84

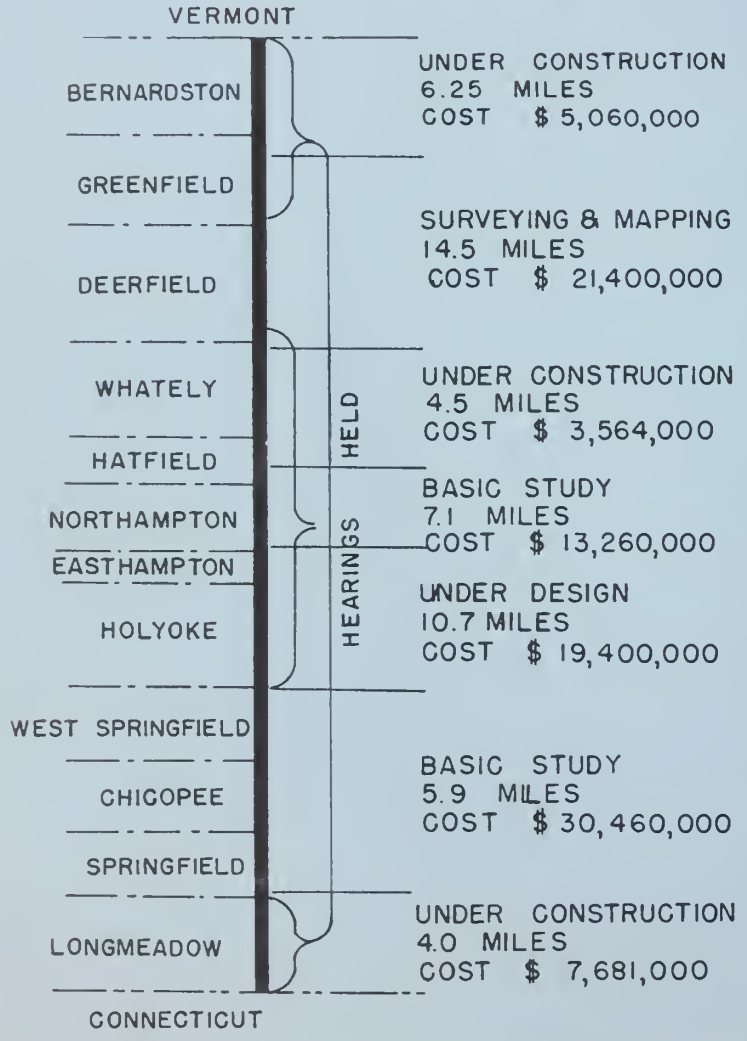
This road was designed under earlier standards for controlled access highways and has served heavy volumes of interstate traffic since its completion in 1952.

Ultimately, this route will be reconstructed to meet the modern design standards of the Interstate and Defense Highway System.



INTERSTATE 91

INTERSTATE ROUTE 91



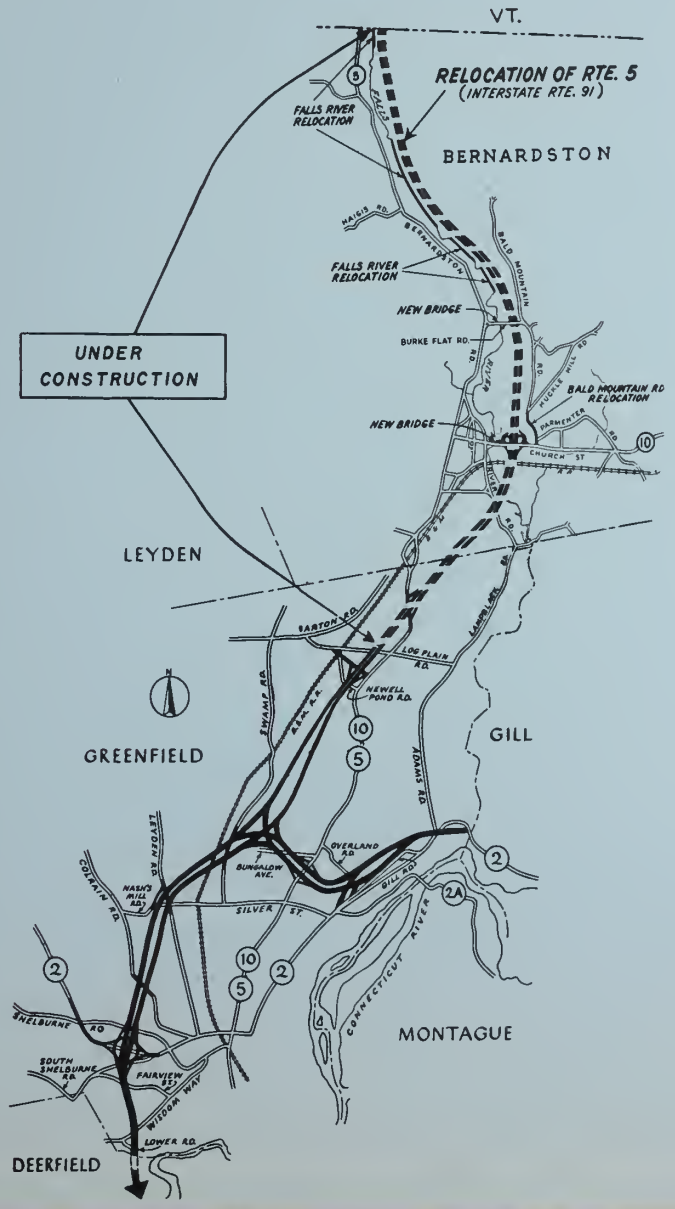
Interstate Route 91 will serve north-south traffic between Bernardston at the Vermont line and Longmeadow at the Connecticut line.

The progress of the route's entire length is shown on chart at left.

This 52.3-mile expressway will link the cities of Springfield, Holyoke and Northampton in a super highway system and tend to join these cities, which are geographically closely related, into the second largest metropolitan area in the State.

The route will also assist in creating a new economic era for the communities along the Connecticut River Valley.

INTERSTATE ROUTE 91

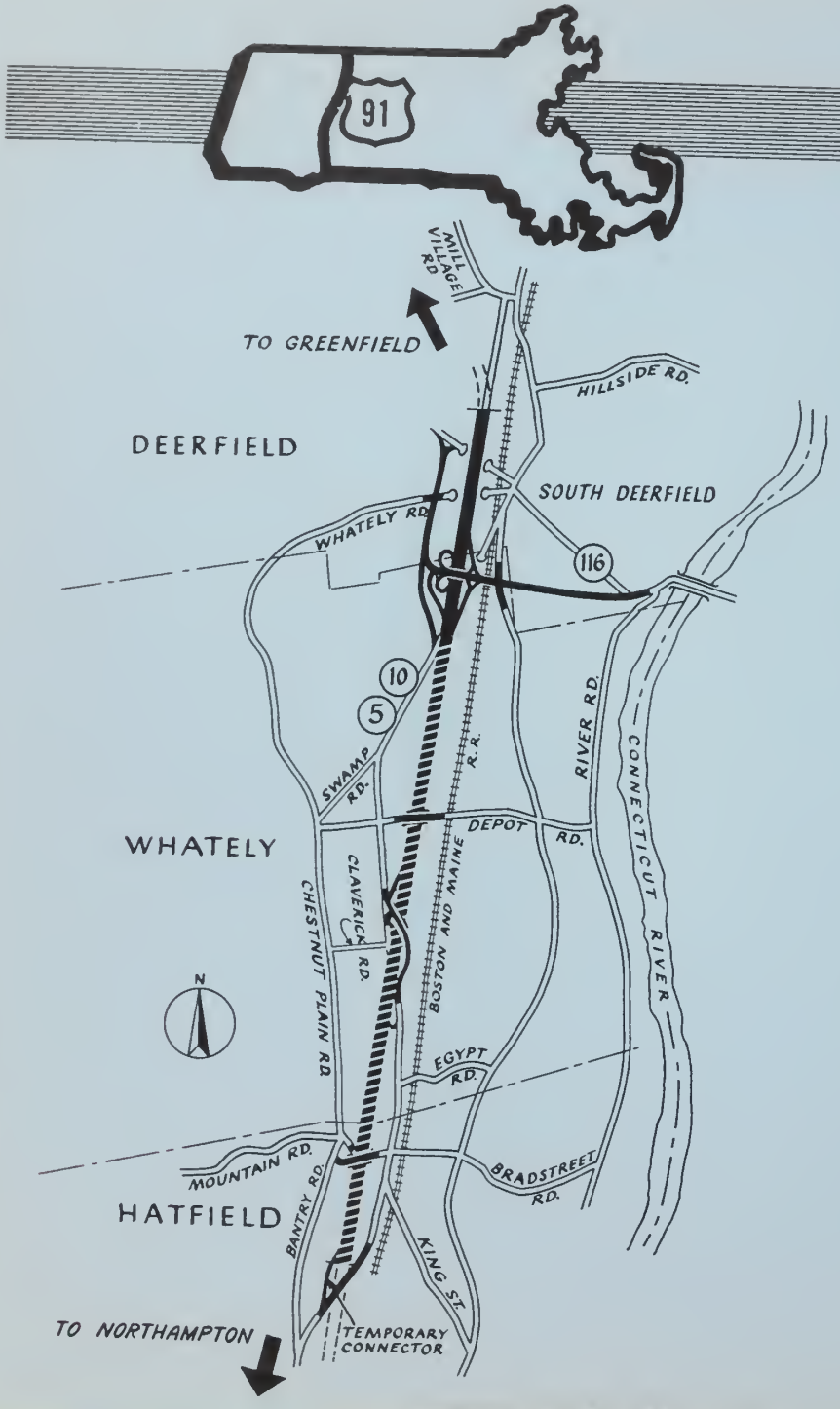


Shown is the 6.2-mile, $5,000,000 segment of this route which is now under construction in Bernardston and Greenfield.

This section will connect with the recently completed section of Interstate Route 91 in Vermont.

Interstate Route 91 will provide expressway travel from the Canadian Border through Vermont, Massachusetts, Connecticut and New York.

INTERSTATE ROUTE 91

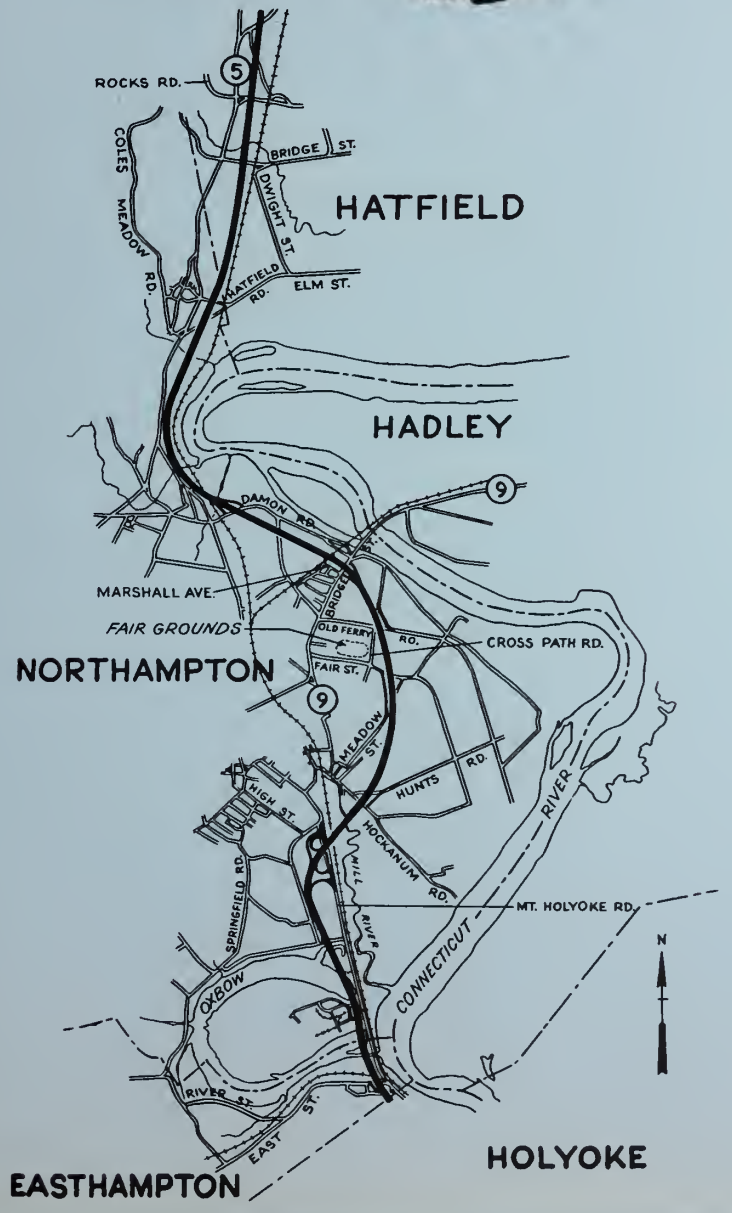


Shown on the map at left is a 4.5-mile segment of Interstate Route 91 on which construction recently started in Whately and Hatfield.

The contract calls for grading and compaction of the roadway and bridge sites. The total cost of this segment, including right of way, construction and engineering, is $3,564,000.

A future contract will complete the section for travel.

INTERSTATE ROUTE 91

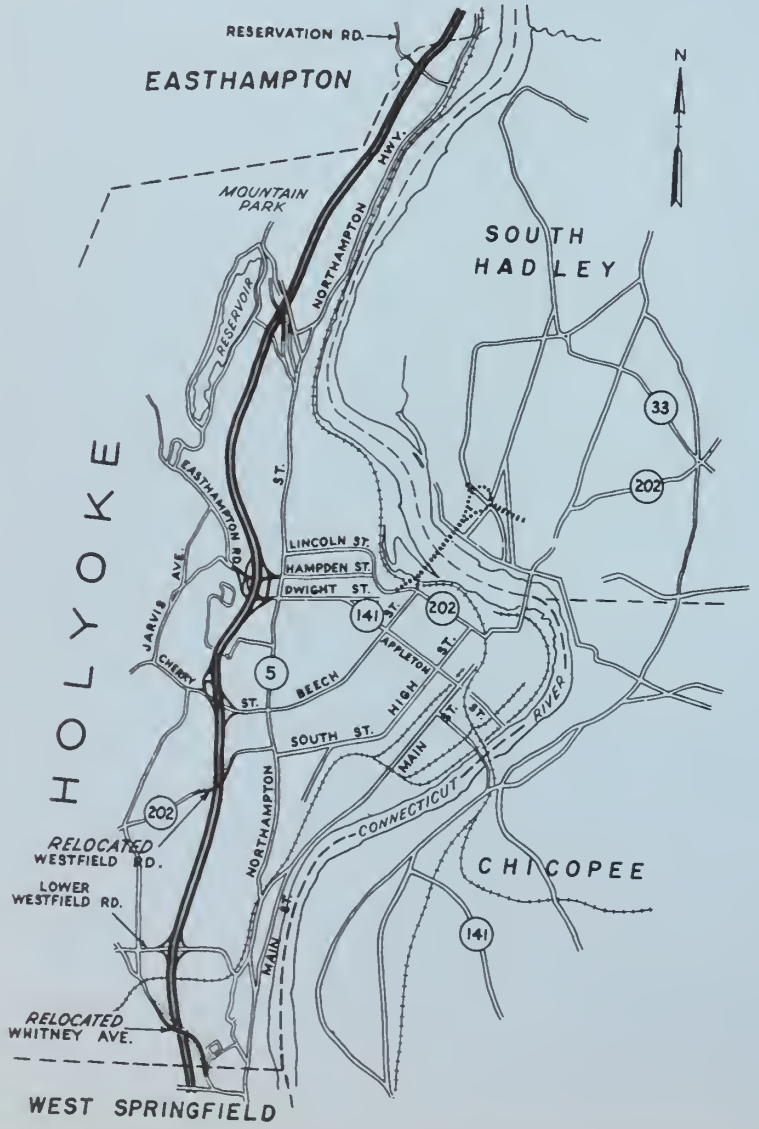


Traffic service which will be provided in Northampton by Interstate Route 91 is shown on the map, left.

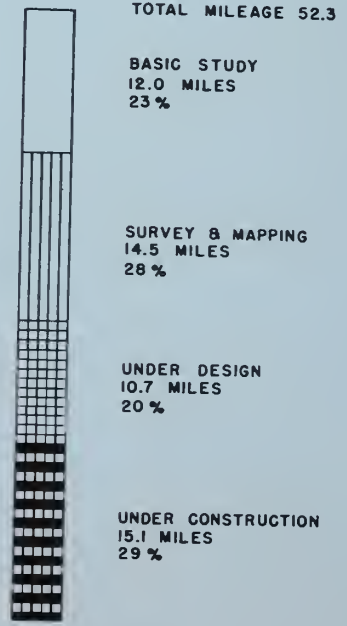
At the present time a 2.2-mile segment estimated to cost $4.4 million is under design. This section begins at the lower end of the map and extends to the first interchange just north of the Oxbow.

The balance northerly is under study.

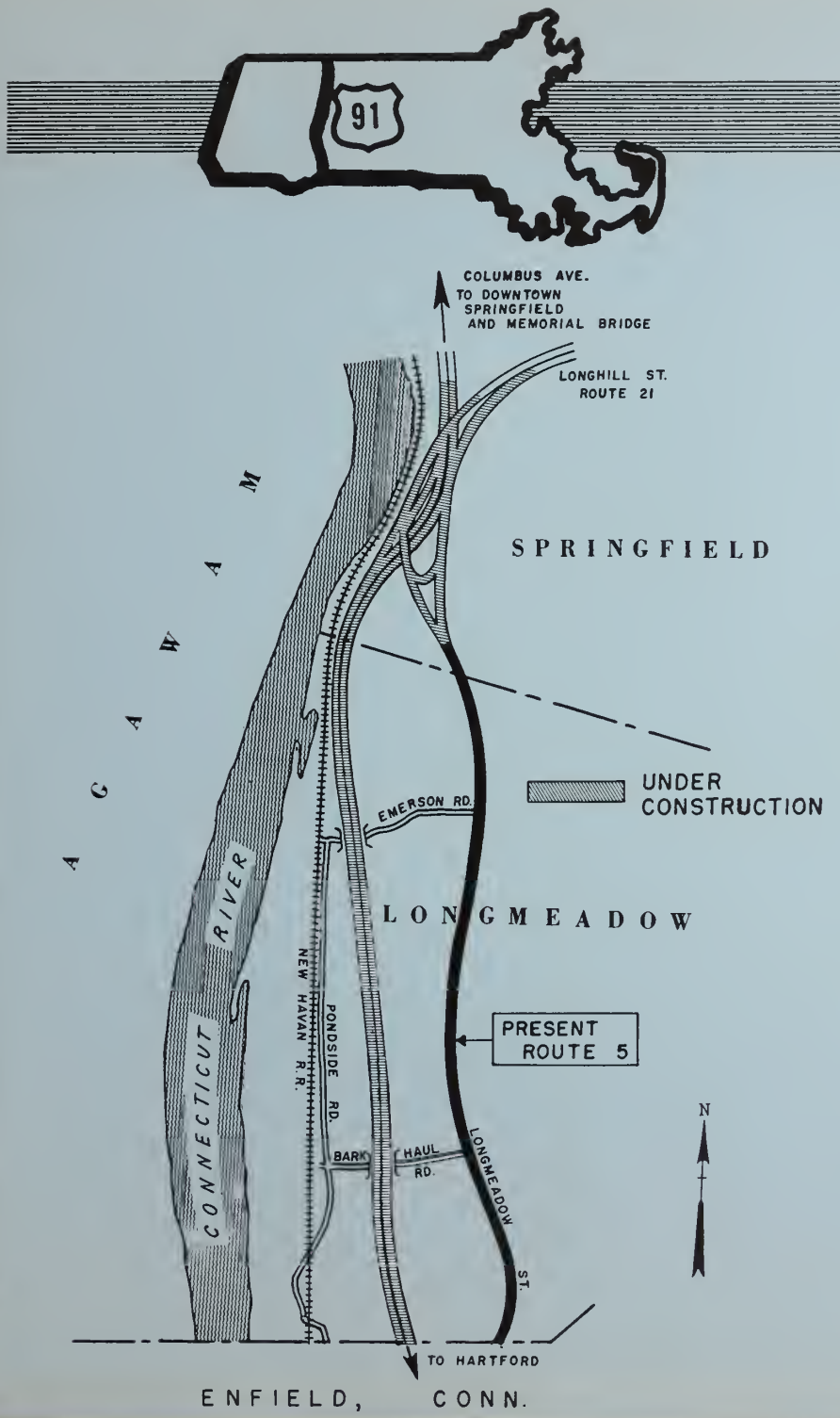
INTERSTATE ROUTE 91



Under design is this 8.5-mile, $15,000,000 section of Interstate Route 91 in Holyoke.

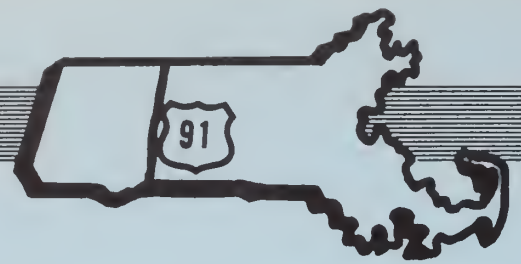


INTERSTATE ROUTE 91



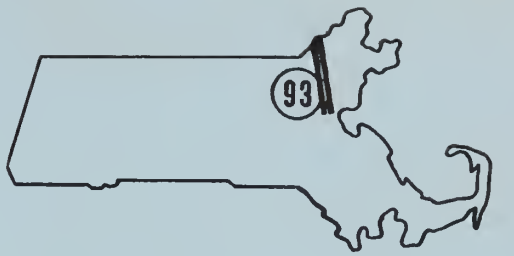
Shown here is the 4-mile, $7,681,000 section of Interstate Route 91 which is under construction in Longmeadow and Springfield which will be completed next Spring.

North of this segment, the route is under study in Springfield, Chicopee and West Springfield.



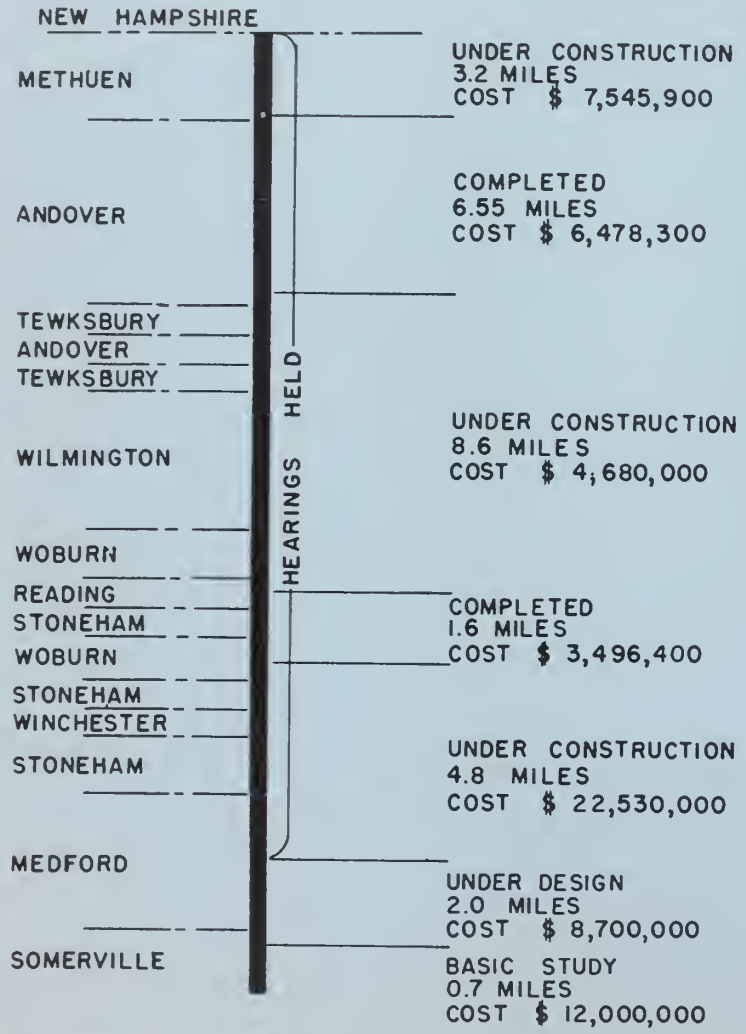
INTERSTATE ROUTE 91

Concrete columns loom in Springfield at the Longhill Street interchange. This section of the route will be completed in the Summer of 1960 and place in operation a four-mile section through Longmeadow to the Connecticut State line.



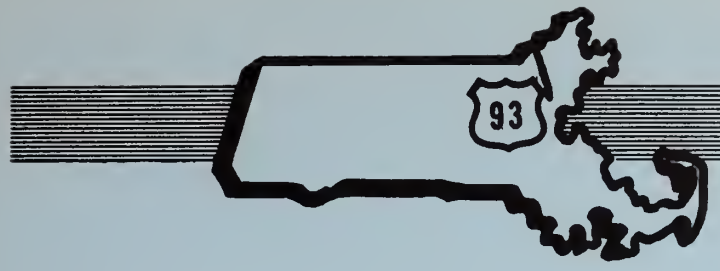
INTERSTATE 93

INTERSTATE ROUTE 93



The chart at left reflects the progress which has been made on the entire 27.5-mile length of this route.

Interstate Route 93 will ultimately join Interstate Route 695 (Inner Belt) at its southerly terminus and serve the heavy traffic demands of communities north of Boston.

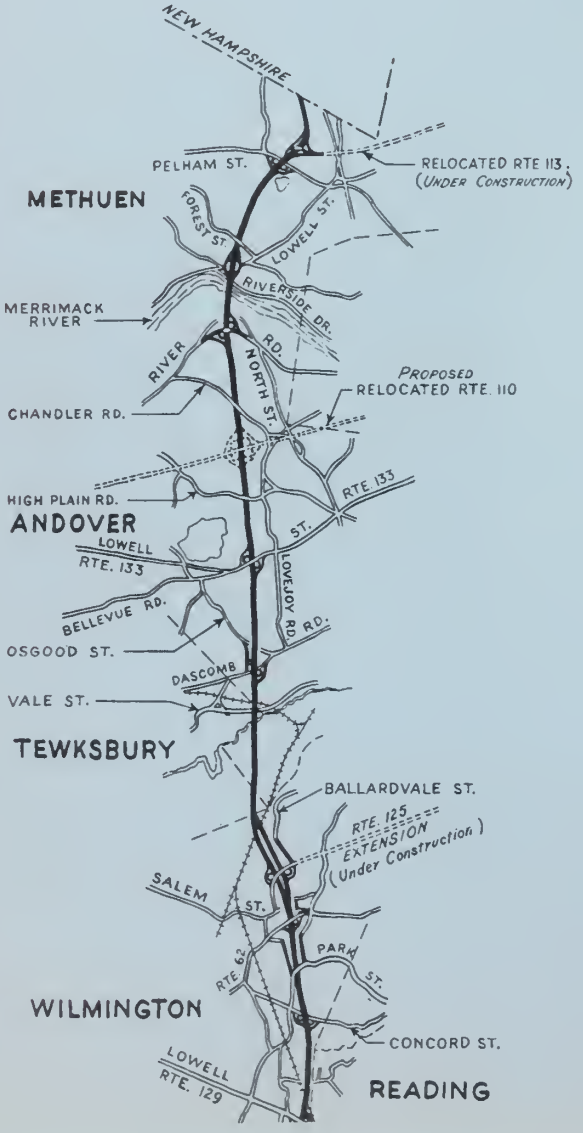


INTERSTATE ROUTE 93

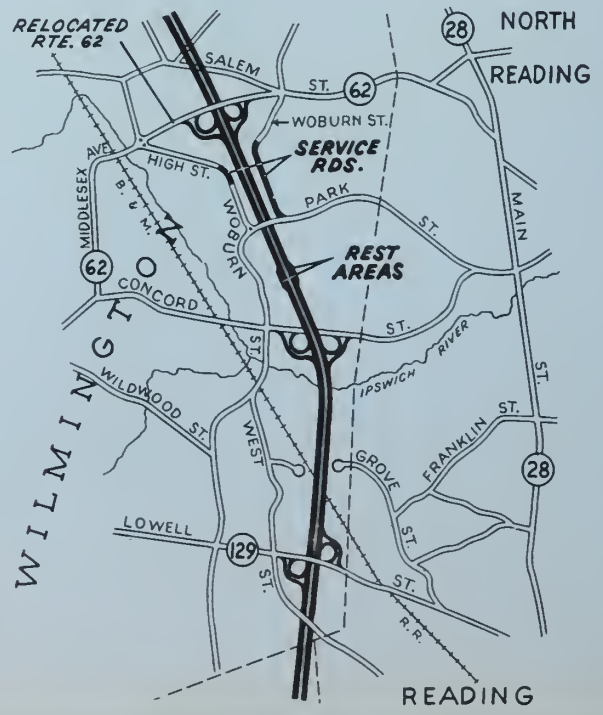
Rapid strides are being made on this important north-south expressway. At left is a view looking south in Andover. This section will consist of six travel lanes up to the New Hampshire line while the section southerly between Tewksbury and Medford will have eight lanes.

Above is a view of the work being done in Stoneham. Here, a small section of Spot Pond Reservoir is being filled to support the expressway. Carefully selected stone is being used to prevent contamination of the water.

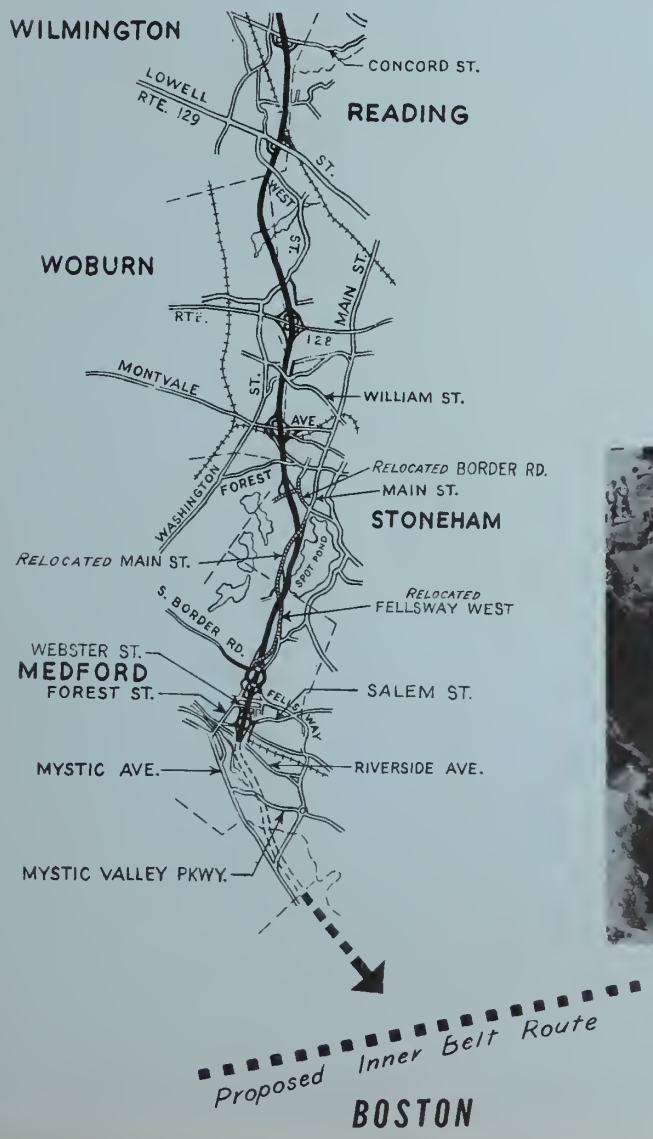
INTERSTATE ROUTE 93



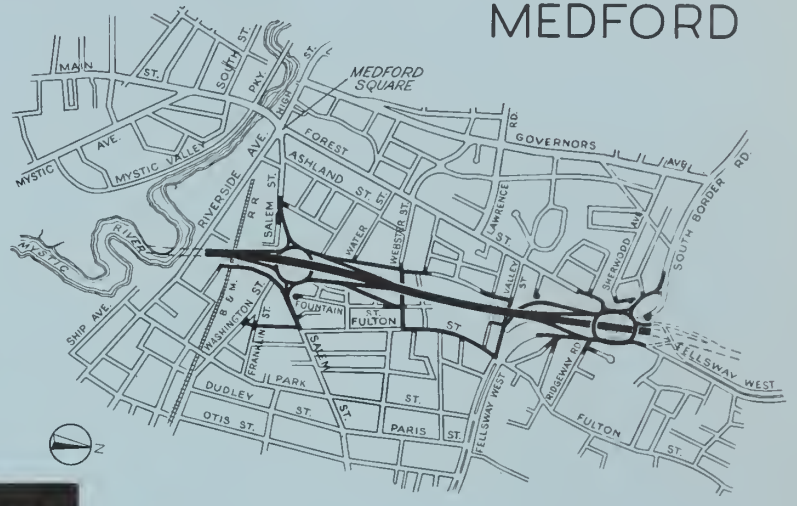
Now under construction from the New Hampshire line to Medford, a distance of 24.8 miles, this great northern expressway will create upon its completion, we believe, an economic impact equal to that experienced along Route 128. This combined impact should provide an even broader Metropolitan Market Area than we know now. The growing economy of Massachusetts will be assisted greatly as the pattern of planned highways are connected into a single system.



INTERSTATE ROUTE 93



MEDFORD

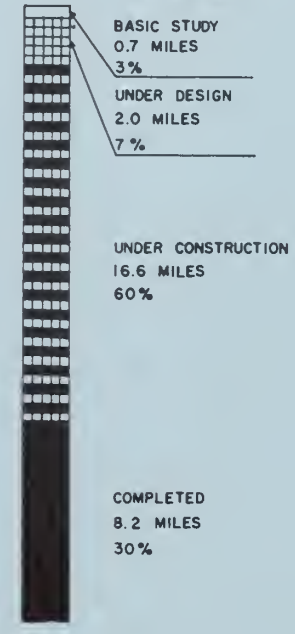


Above is a locus map of the Medford section now under construction.

Pictured is the installation of the 120-inch culvert which will carry Medford's Gravelly Creek away from the expressway area.

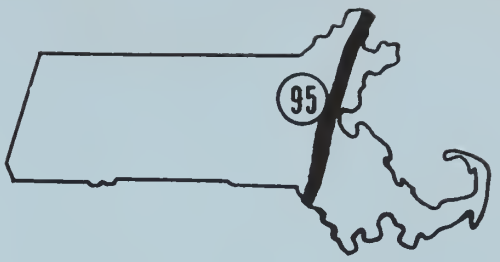
Interstate Route 93 ultimately will connect to the Inner Belt Highway, both now under location study.

INTERSTATE ROUTE 93



Aerial shows the Interstate Route 93 bridge crossing the Merrimack River between Andover and Methuen. Locus map shows the location of the bridge and the Methuen interchange. Completion of this key section is scheduled for late this year.

The chart shows the total progress of this route to date.



INTERSTATE 95 NORTH

INTERSTATE ROUTE 95

SALISBURY
AMESBURY
NEWBURYPORT
WEST NEWBURY
NEWBURY
GEORGETOWN
ROWLEY
BOXFORD
TOPSFIELD
DANVERS
PEABODY
LYNN
SAUGUS
REVERE

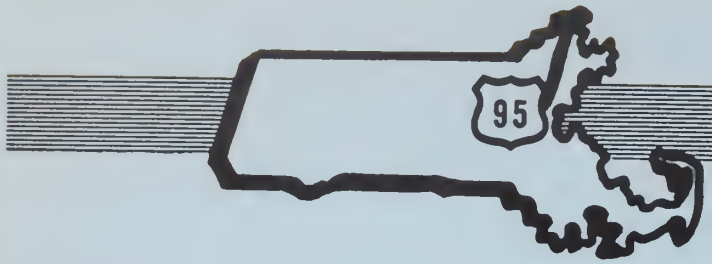
COMPLETED
20.8 MILES
COST $17,677,000

BASIC STUDY
13.1 MILES
COST $21,300,000

The summary of progress on this section of Interstate Route 95 north of Boston is shown on the chart at left.

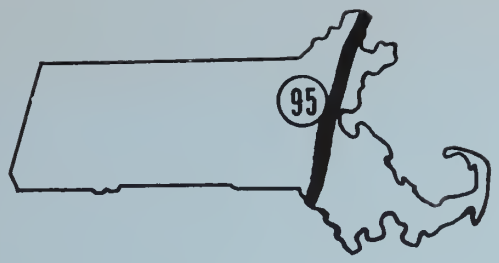
INTERSTATE ROUTE 95

Above is a section of Interstate Route 95 at the Storey Avenue overpass in Newbury. The first section of the four lane, divided expressway, from Danvers to Boxford - a distance of approximately six miles - was completed in 1952; the second section, between Boxford and Newbury - approximately five miles - in 1953; the third section, from Newbury to the New Hampshire line - approximately nine miles - in 1954. This route will be extended southerly from Danvers to Revere where ultimately it will connect to the Northeast Expressway.



INTERSTATE ROUTE 95

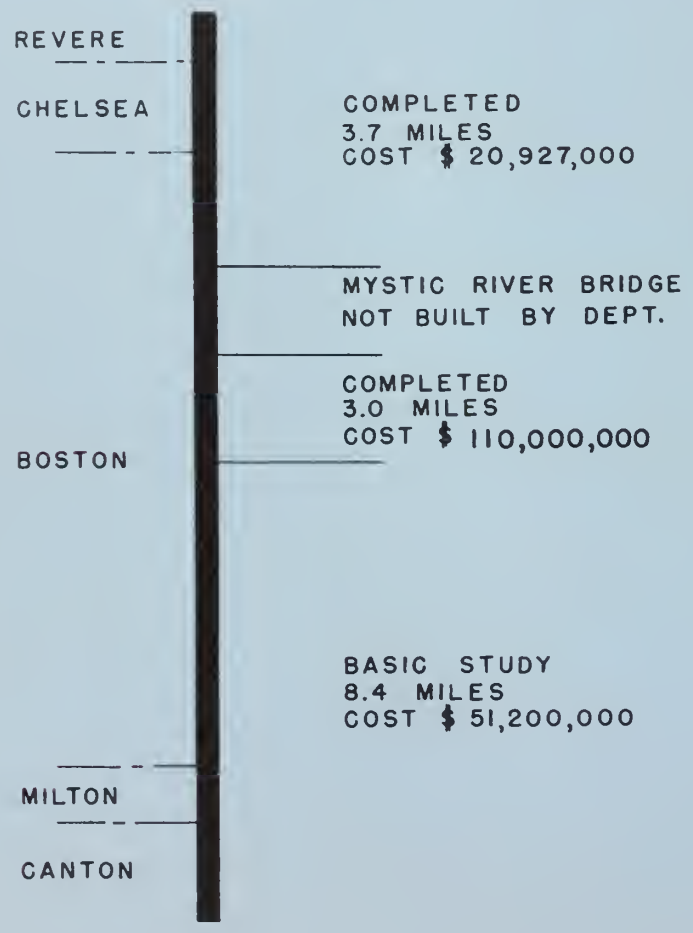
The John Greenleaf Whittier Bridge on Interstate 95 spans the Merrimack River between Newburyport and Amesbury. This structure was completed in 1954.



METROPOLITAN BOSTON AREA

INTERSTATE 95

INTERSTATE ROUTE 95



Shown at left is the summary of progress of Interstate Route 95 in the Boston Metropolitan Area.

This highway will be the key traffic distributor for eastern Massachusetts.

Please note that the Mystic River Bridge was constructed by another agency.

INTERSTATE ROUTE 95

The 1948 Master Highway Plan for the Boston Metropolitan Area designated this road as the Northeast Expressway. This section of Interstate Route 95 was completed in 1958 at a total cost of $21,000,000. The expressway links with the Mystic River Bridge which feeds traffic to the Fitzgerald (Central Artery) Expressway.

INTERSTATE ROUTE 95

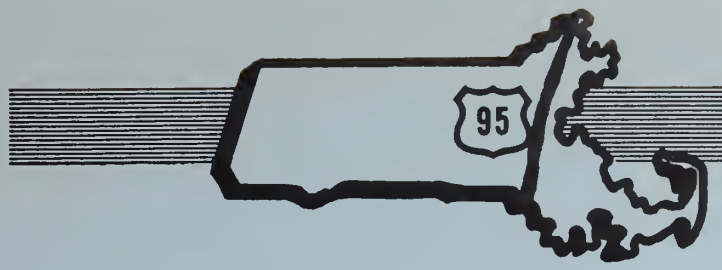
SPEED-UP PROGRAM

Chief Engineer Edward J. McCarthy and Commissioner DiNatale view completion of exit ramp of tunnel section of the Fitzgerald Expressway.

The opening of the Fitzgerald-Southeast Expressways in Boston on June 25, 1959, eight months ahead of schedule, began a new era in travel for the north-south metropolitan area.

The opening has been praised not only by the Boston elected officials and leading businessmen who originally requested an acceleration of the work, but also from the Boston Traffic Commission.

The Traffic Commission stated that the completion of the Fitzgerald Expressway "was a wonderful help in eliminating traffic congestion in our busy intown streets and it also caused a marked decrease in traffic on many of our major arteries entering the city.



SPEED-UP PROGRAM

Over one million tons of earth and 900,000 tons of gravel were imported to the construction site. A vast overload area, measuring 35 feet in height, 200 feet in width and 1,000 feet in length, comprising some 375,000 tons of material had to be carefully treated to guarantee compaction of underlying materials. Special equipment was brought in to move frozen earth and pouring areas on viaduct structures were enclosed and heated during winter months.

The order to speed the work on the 1.7-mile, $14,000,000 section of the Central Artery, shown before, above, and after, right, was effective January 2, 1959. Despite obstacles of winter cold and a wet spring, the road was open five days in advance of the accelerated date of June 30th. The original contract completion date was February 23, 1960. Travel time between the North and South Shores has been reduced by over two-thirds.

DiNatale's New Ideas Speed Roadbuilding

EXTENSION OF REMARKS
OF
HON. JAMES A. BURKE
OF MASSACHUSETTS
IN THE HOUSE OF REPRESENTATIVES
Tuesday, June 30, 1959

Mr. BURKE of Massachusetts. Mr. Speaker, on Wednesday, June 24, 1959, John Harris, writer for the Boston Globe newspaper, wrote an article entitled "DiNatale's New Ideas Speed Roadbuilding." Public Works Commissioner Anthony N. DiNatale has done an outstanding job in bringing about the completion of the Southeast Expressway months ahead of schedule. He has released a major part of the bottleneck on traffic which has been strangling the trucking and automobile traffic from the North Shore to the South Shore of Massachusetts. Commissioner DiNatale is a resident of my hometown in Milton, Mass., so I am doubly honored to have his accomplishments included in my remarks today.

On Thursday, June 25, 1959, the Southeast Expressway was officially opened.

Its opening received widespread plaudits from newspapers, businessmen, civic leaders and public officials. The Southeast Expressway has opened new possibilities for business and industrial development.

I am very happy to day that Congress THOMAS P. O'NEILL and myself were members of the Massachusetts General Court when this great roadbuilding program was inaugurated under the leadership of the late beloved Governor Paul A. Dever.

Gov. Foster Furcolo is to be commended for his part in completing the work on the Southeast Expressway which shall play such a prominent part in the future economic development in Massachusetts:

DINATALE'S NEW IDEAS SPEED ROADBUILDING
(By John Harris)

The opening tomorrow of the Southeast Expressway, which for the first time in history will provide a superhighway link between North and South Shores, has stimulated Beacon Hill interest in the man who directed its construction—State Public Works Commissioner Anthony N. DiNatale.

The speed with which the commissioner gets things done and the businesslike innovations he has brought to his department, the largest in our State government, have been winning him recognition as one of the greatest executives ever to head State public works.

The Southeast Expressway will open 8 months in advance of schedule, a boon to motorists, a lift to public safety, and, by chance, a partial solution at least in the event of the now expected shutdown of the Old Colony system.

But that's only one example of DiNatale's manner of solving pressing road problems.

In time for the summer traffic, the last gap in the Mid-Cape Highway has been completed with the opening of the Eastham-Orleans stretch 4 months ahead of schedule.

The Kingston-Plymouth bypass on Route 3 has been double-barrelled and will be opened July 1, 6 months ahead of schedule. This will provide 85 miles of nonstop travel from Duxbury to Provincetown.

Thanks to DiNatale's efficiency our whole statewide highway program has been so handled that it will be his administration that will have earned the honor of having brought to fruition the long-desired master plan for Bay State superhighways.

Last year he opened more than 50 miles of new roads and this year the program is going to provide 65 miles more, according to present commitments.

These are not the old-type roads of about 30-foot width, with 3-foot shoulders. They are mostly 40-foot or more, with 10-foot shoulders for greater safety.

In addition, the commissioner has been pressing forward on the so-called outer belt—a projected circle from Salisbury to Foxboro, 17 miles west of Route 128. Seven contracts on that have permitted construction to begin in the Lowell-Chelmsford-Westford area. And DiNatale already has the inner belt (projected east of Route 128) under study.

That might sound like quite a workload for any man. DiNatale takes it in stride though he works long, long hours to keep it all going.

He is busy, at the same time, with participation in the Federal Government's interstate road program and has several of these sections here under construction, including the Worcester Expressway, a high-speed road through the Connecticut Valley and the new road from Boston to the New Hampshire line (new Route 93).

Officials and lawmakers on Beacon Hill appreciate what DiNatale has been doing and this is among the reasons there is an absence of any desire to slash the public works budget. There is another reason, too, which is not always fully appreciated.

Funds for the State department of public works come out of the highway fund. This fund, under our constitution as amended, can be used only for highway purposes. So the only effect of cutting down on the appropriation would be to slow down the State's getting a highway system capable of handling the record number of automobiles which now try to use it.

Since the highway fund is also used to pay off bonds which have been floated for highway work, the amount of money currently in the fund will not be sufficient to carry on our road improvement at its present stepped-up (and, from a safety viewpoint, highly desirable) pace unless the extra one-half cent gasoline tax the Governor has asked is approved. Thus its final passage is vital.

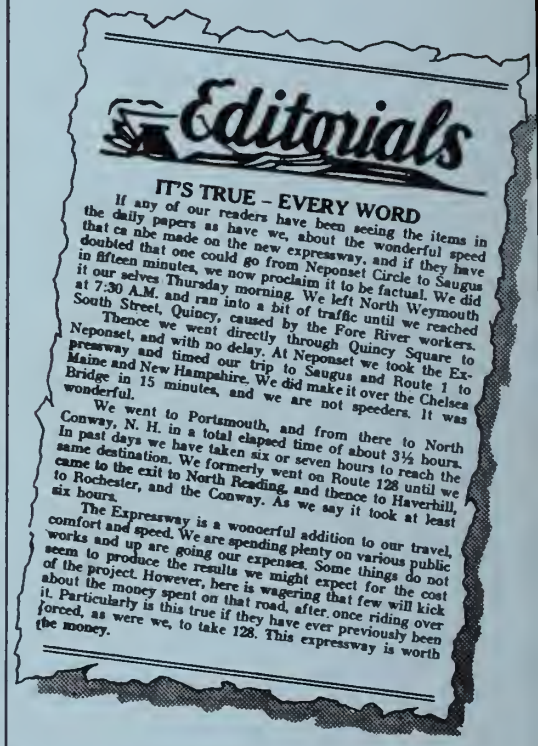
There is space to list only a few of the many innovations DiNatale has introduced in the operations of his vast department. Massachusetts has become the first State to earmark for contract its entire State highway grass-mowing program, which means the department no longer has the immense annual expense of buying and maintaining seasonal equipment.

This spring, for the first time, the spring cleaning of highways was done on a contractual basis. In another month the department will have its own helicopter for surveying road projects from the air rather than the old, slow, expensive way of doing it with surveying parties on the ground.

In this latter connection highway departments throughout the Nation are watching another DiNatale innovation. With the help of Massachusetts Institute of Technology, an electronic computer has been placed in the basement of the department on Nashua Street to speed up the analysis of highway projects. It has already saved thousands of engineering manhours.

Another DiNatale first being watched nationwide is his project to use peat formerly dug and discarded from new highway routes. Under the new plan it is being mixed with sand and is providing loam to cut down one of the former big costs of road construction.

Most striking innovation of all, at least pictorially, are two huge, swinging wall maps DiNatale has in his office. These took a year to provide. Now, however, they furnish the commissioner with an at-a-glance, up-to-the-minute report on the condition of every road in the State's highway system, about 3,000 miles of them. Thus neediest roads now get first attention.



Editorials

IT'S TRUE – EVERY WORD

If any of our readers have been seeing the items in the daily papers as have we, about the wonderful speed that ca nbe made on the new expressway, and if they have doubted that one could go from Neponset Circle to Saugus in fifteen minutes, we now proclaim it to be factual. We did it our selves Thursday morning. We left North Weymouth at 7:30 A.M. and ran into a bit of traffic until we reached South Street, Quincy, caused by the Fore River workers.

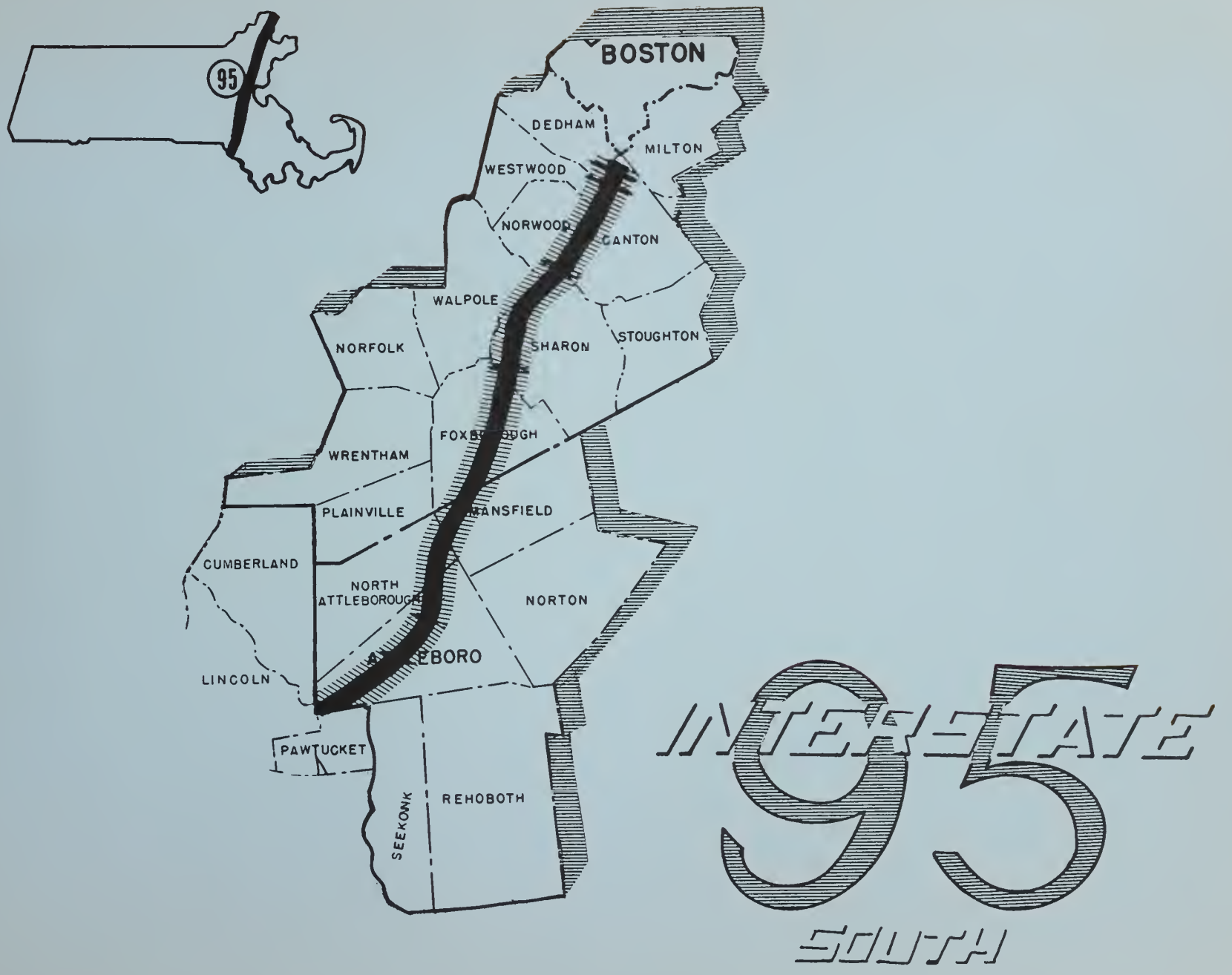
Thence we went directly through Quincy Square to Neponset, and with no delay. At Neponset we took the Expressway and timed our trip to Saugus and Route 1 to Maine and New Hampshire. We did make it over the Chelsea Bridge in 15 minutes, and we are not speeders. It was wonderful.

We went to Portsmouth, and from there to North Conway, N. H. in a total elapsed time of about 3½ hours. In past days we have taken six or seven hours to reach the same destination. We formerly went on Route 128 until we came to the exit to North Reading, and thence to Haverhill, to Rochester, and the Conway. As we say it took at least six hours.

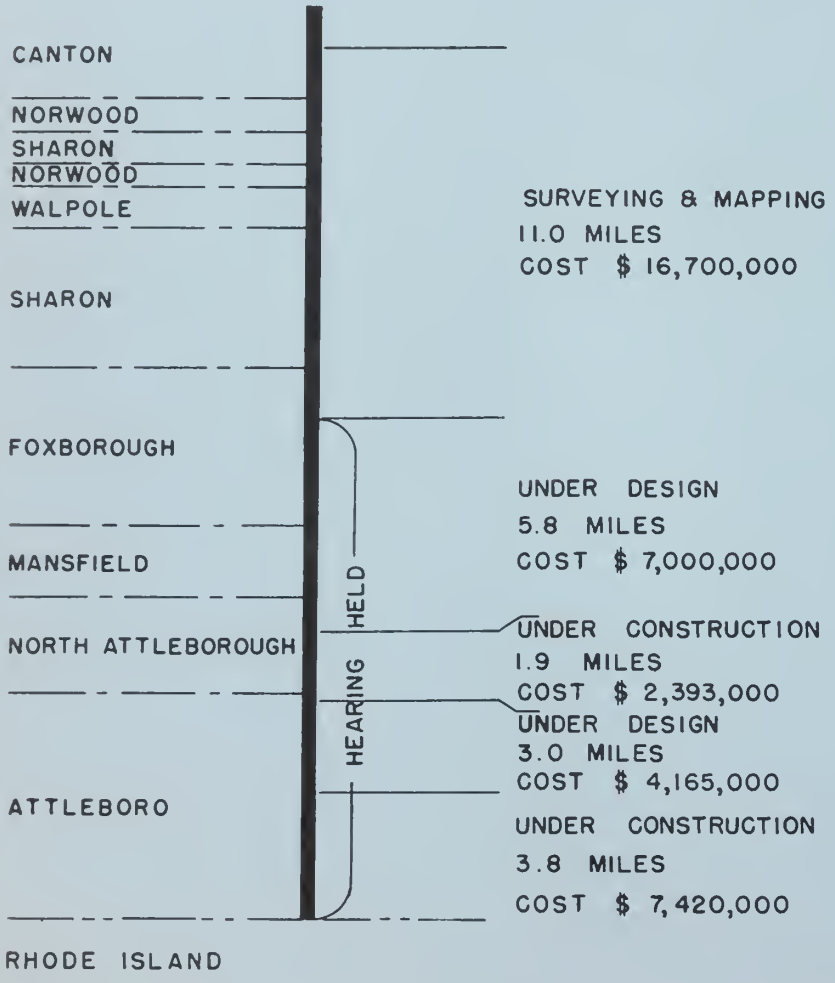
The Expressway is a wonderful addition to our travel, comfort and speed. We are spending plenty on various public works and up are going our expenses. Some things do not seem to produce the results we might expect for the cost of the project. However, here is wagering that few will kick about the money spent on that road, after once riding over it. Particularly is this true if they have ever previously been forced, as were we, to take 128. This expressway is worth the money.

The Editorial is reprinted from

The Weymouth TRUTH, dated July 16, 1959.


95
BOSTON
DEDHAM
MILTON
WESTWOOD
NORWOOD
CANTON
WALPOLE
STOUGHTON
NORFOLK
SHARON
WRENTHAM
PLAINVILLE
MANSFIELD
CUMBERLAND
NORTH ATTLEBOROUGH
NORTON
LINCOLN
PAWTUCKET
SEEKONK
REHOBOTH
INTERSTATE
95
SOUTH

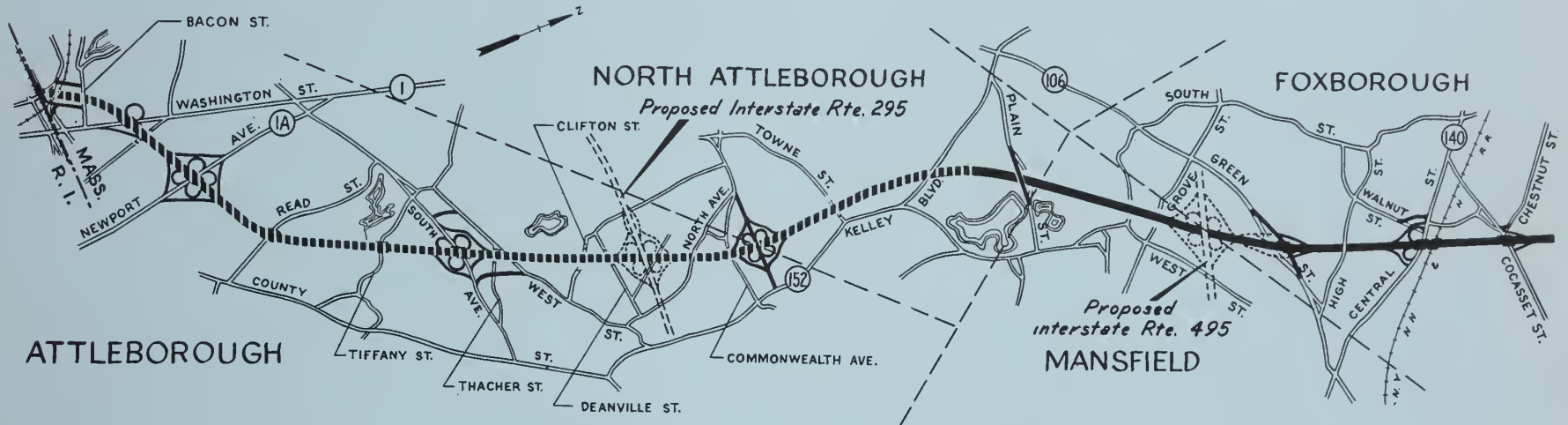
INTERSTATE ROUTE 95



The progress to date on Interstate Route 95 south of the Metropolitan Boston Area is shown on the chart at left.

This expressway, coupled with the Fall River Expressway, will provide southeastern Massachusetts with one of the finest traffic service systems of any comparable area in the Nation.

INTERSTATE ROUTE 95

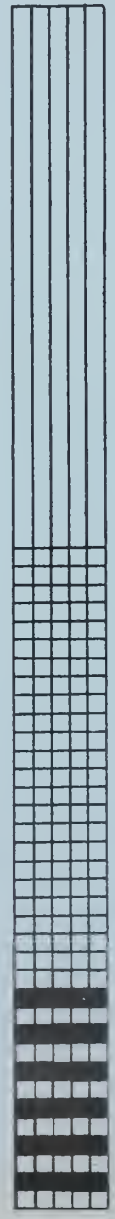


under construction

Shown above is the section of Interstate Route 95 under construction in Attleborough and North Attleborough. The portion through Mansfield and Foxborough is under design. The proposed interchanges for Interstate Routes 295 and 495 are indicated above. Time-saving, non-stop travel interstate as well as intrastate will be possible when these routes are connected. The unimpeded movement of workers, executives, farmers, tourists and manufactured goods and produce will improve the total economy of Massachusetts.

INTERSTATE ROUTE 95

Rapid strides are being taken on this important interstate segment which will serve the traffic needs in the southeastern area of the State.



TOTAL MILEAGE 25.5

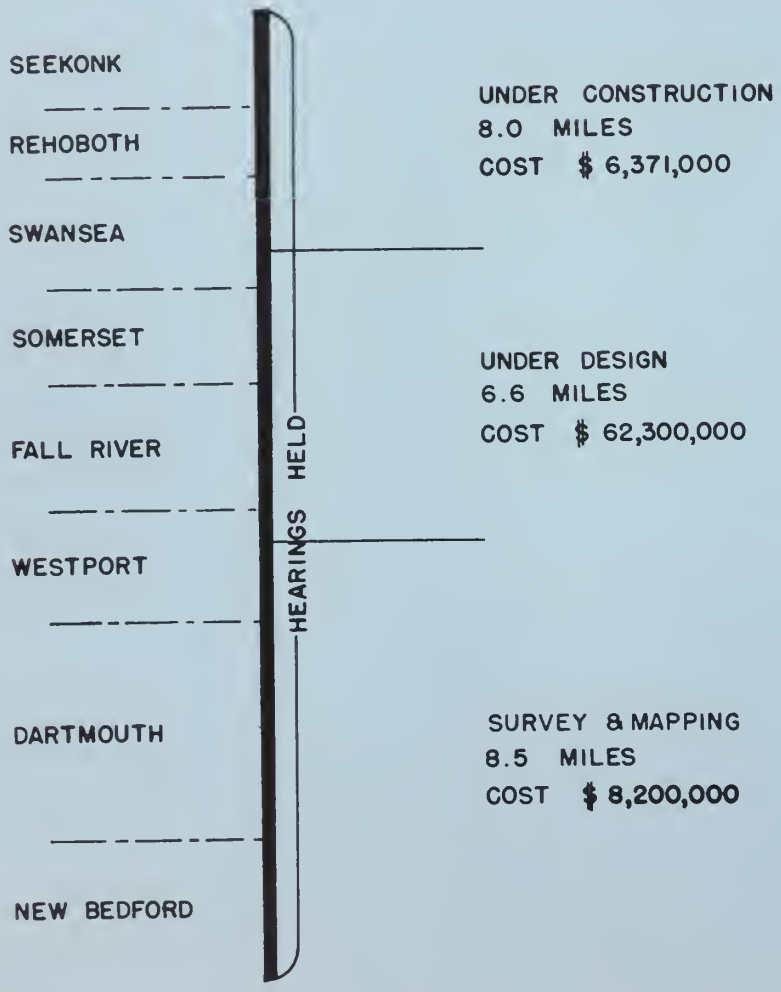
SURVEYING & MAPPING
11.0 MILES
43 %

UNDER DESIGN
8.8 MILES
35 %

UNDER CONSTRUCTION
5.7 MILES
22 %

INTERSTATE 195

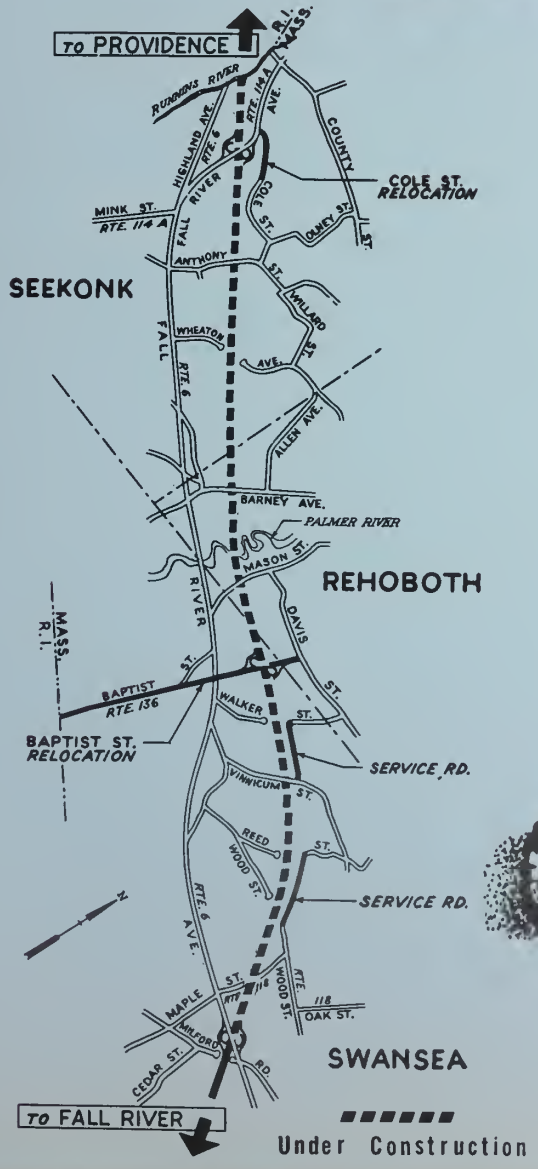
INTERSTATE ROUTE 195



Interstate Route 195 will link the important cities of Providence, Fall River and New Bedford in an expressway system and aid in stimulating the economic growth of the communities traversed by the route.

The current progress of the route is shown on the chart at left.

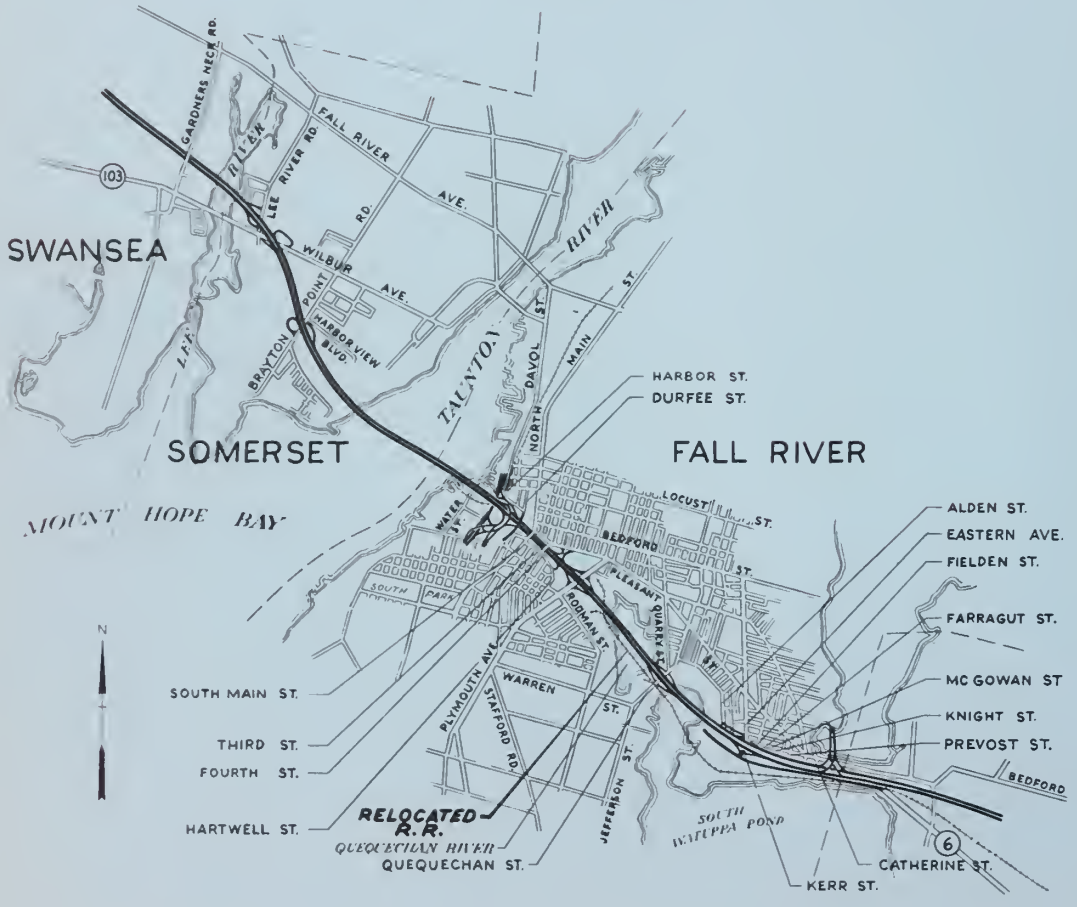
INTERSTATE ROUTE 195



Eight miles, shown on map at left, of this route are under construction at a cost of $6,371,000.

This road will provide service for the southeastern and Cape Cod areas of the State and relieve the presently inadequate Route 6.

INTERSTATE ROUTE 195

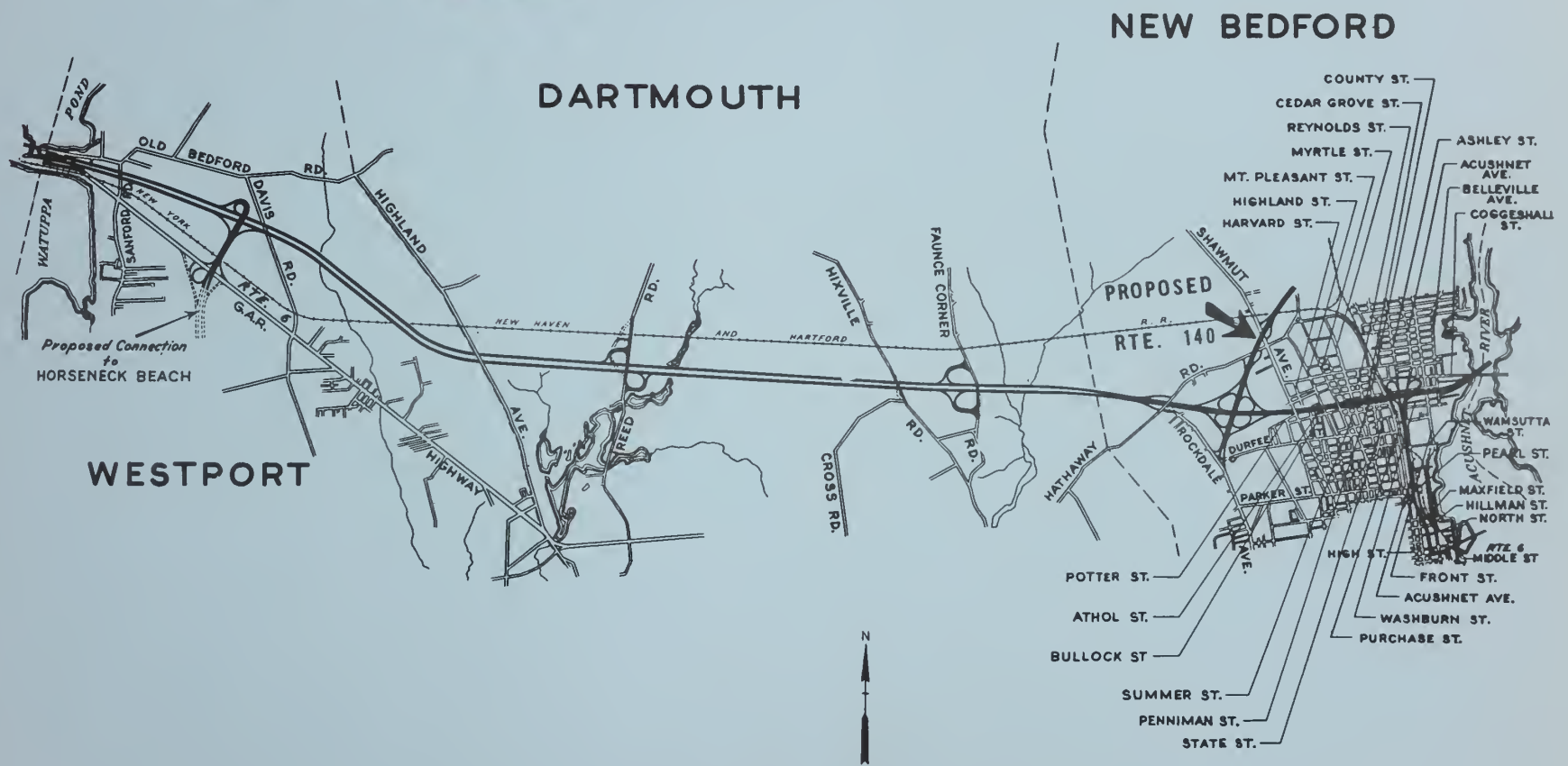


Extension easterly of the eight-mile section of Interstate Route 195 through Seekonk, Rehoboth and Swansea is this segment, left, which will be designed to provide maximum traffic service for the city of Fall River.

Shown immediately east of the Taunton River is the proposed interchange for the future extension of the Fall River Western Expressway.

When completed, Fall River will have one of the finest integrated highway systems of any city in the Nation.

INTERSTATE ROUTE 195



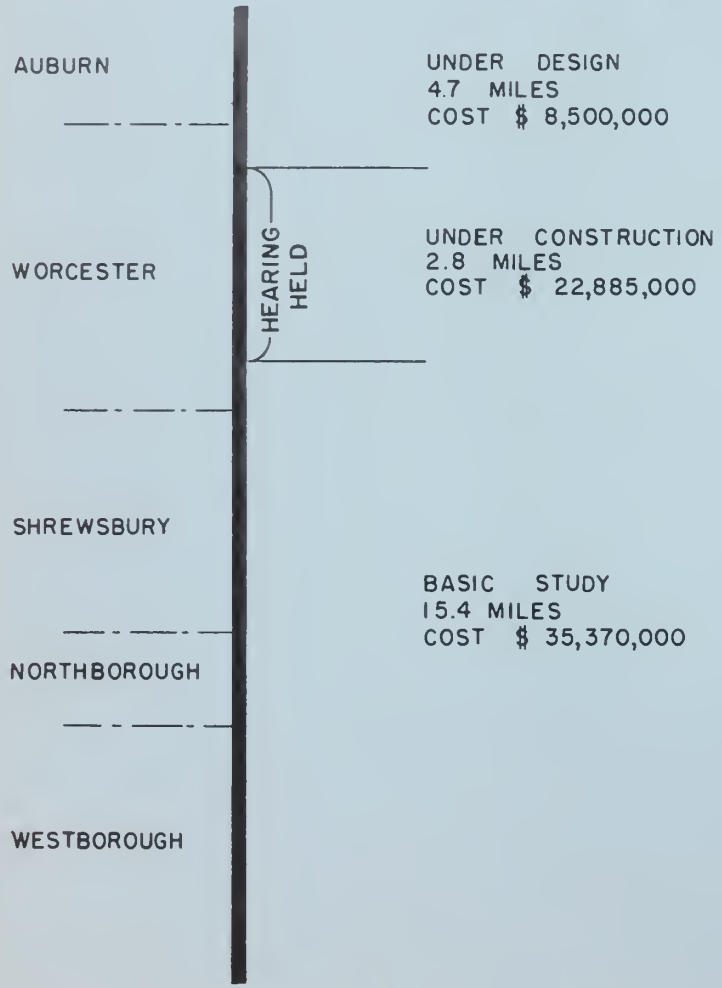
Shown above is Interstate Route 195 as it is proposed between Westport and New Bedford. It can be noted that the Horseneck Beach road, now under construction at its southerly terminus in Westport, ultimately will be extended northerly to interchange with both Route 6 and the proposed interstate highway. In New Bedford, Route 140 will be extended southerly from its present relocated terminus to interchange with Interstate Route 195. This highway network will provide this area with safe yet swift travel between points of origin and destination.

INTERSTATE ROUTE 195

Artist's conception of the proposed $23,000,000, 1.1-mile Interstate Route 195 bridge over the Taunton River between Somerset and Fall River is shown at left. The elevated interchange is the proposed connection with the Fall River Western Expressway.

INTERSTATE 290

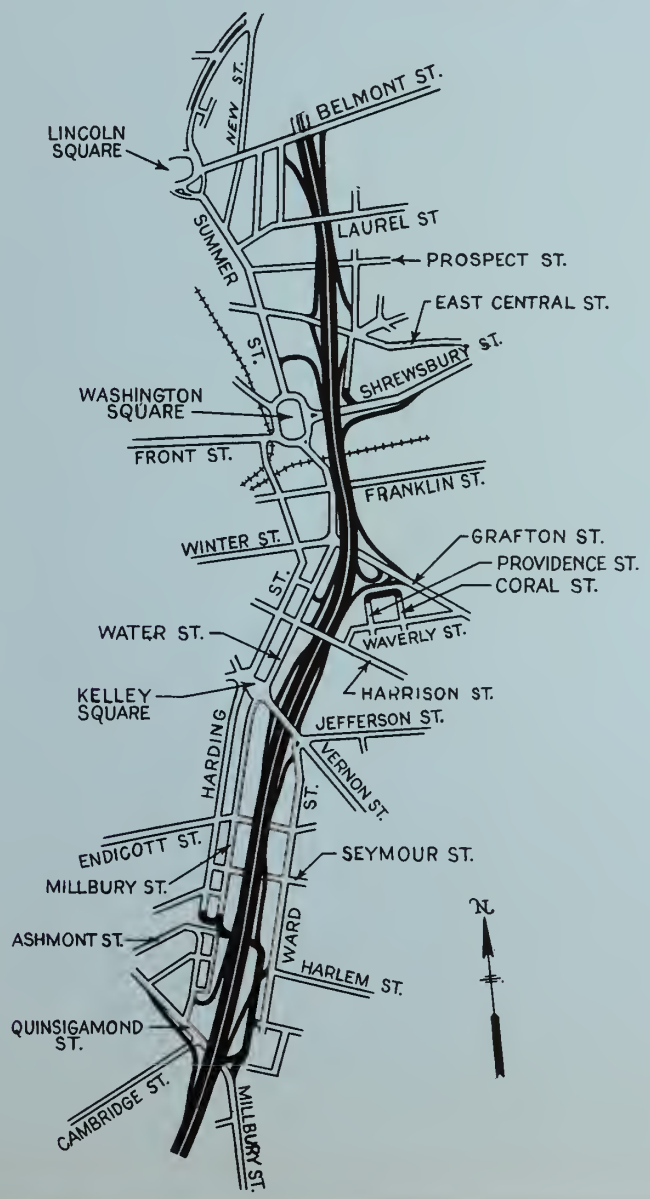
INTERSTATE ROUTE 290



This important expressway will serve the city of Worcester and its metropolitan area as the Central Artery, Northeast and Southeast Expressways now serve the Boston Metropolitan Area.

Chart at left shows the progress made to date on this highway.

INTERSTATE ROUTE 290



Shown at left is the traffic service pattern which will be provided through the downtown area of Worcester. This 2.8-mile, $22,885,000 section is now under construction. This project is scheduled for completion in the Fall of 1960.

This expressway segment is designed to handle a daily traffic count of 80,000 vehicles which are anticipated in 1980.

Featured in this section is a 1,555-foot elevated section which will carry the divided roadways of the expressway over Grafton, Franklin and Shrewsbury streets and the tracks of the Boston and Albany railroad.

When completed, downtown destinations will be reached in safety and comfort.

INTERSTATE ROUTE 290

Worcester's through-town highway - Interstate Route 290 - begins to take final form as girders are placed. Completion of this section is scheduled for the Fall of next year.

INTERSTATE ROUTE 290

Work in the Shrewsbury Street area pictured here shows steady progress toward completion of the 2.8-mile, $22,885,000 expressway segment through downtown Worcester.

INTERSTATE ROUTE 290

Referred to as the Worcester Loop, Interstate Route 290 along with possible connections with Routes 12 and 122A, now under study as part of the Worcester Metropolitan Highway Plan, will provide expressway service for both north-south and east-west through travel and relieve existing cross movements of traffic on city streets.

The chart summarizes the progress which has been made on Interstate Route 290.

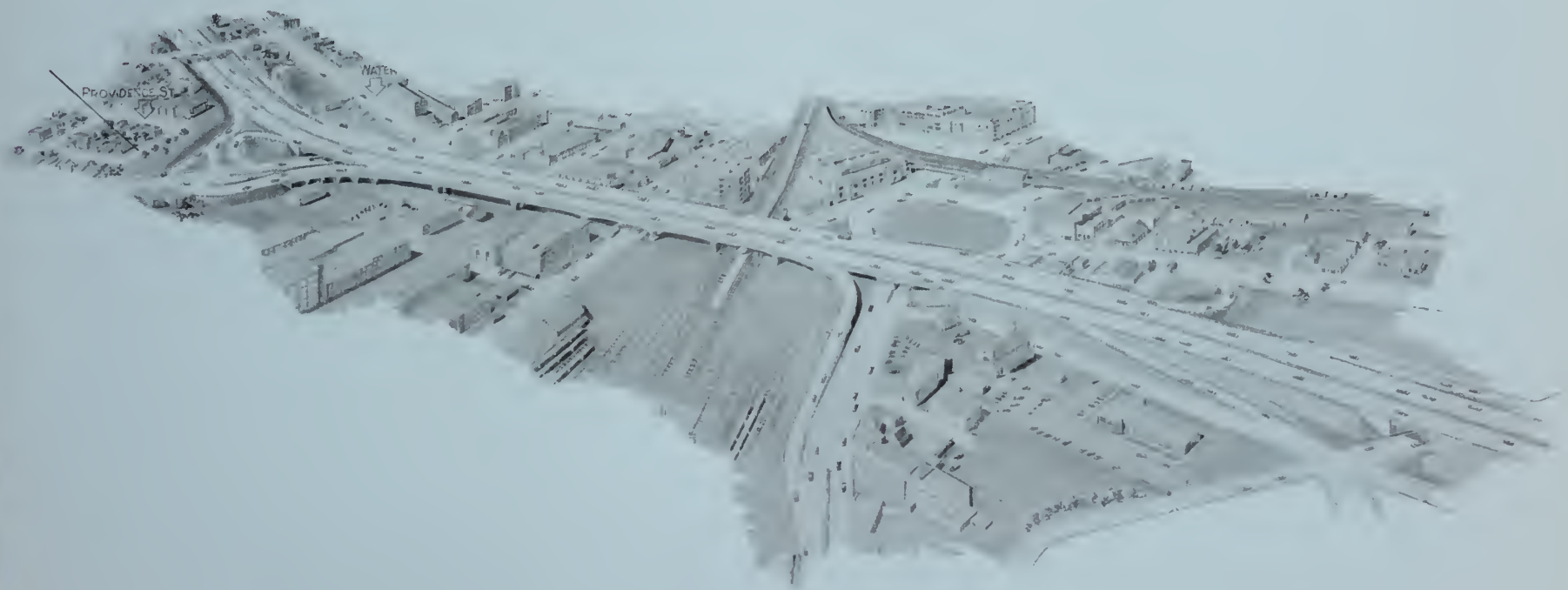
TOTAL MILEAGE 22.9

BASIC DESIGN
15.4 MILES
67%

UNDER DESIGN
4.7 MILES
21%

UNDER CONSTRUCTION
2.8 MILES
12%

INTERSTATE ROUTE 290



Artist's conception of Interstate Route 290 when it is completed in the city of Worcester.

INTERSTATE 291

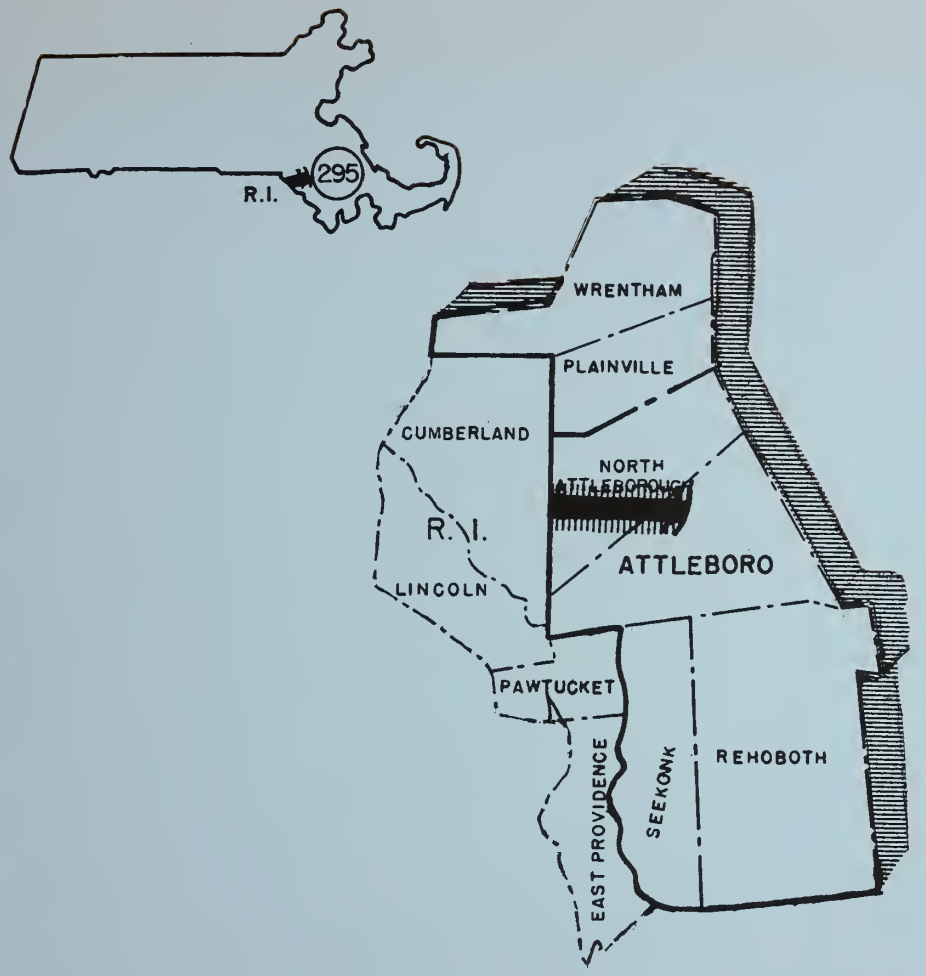
INTERSTATE ROUTE 291

COMPLETED
1.4 MILES
COST $ 2,466,000

BASIC STUDY
4.0 MILES
COST $ 11,300,000

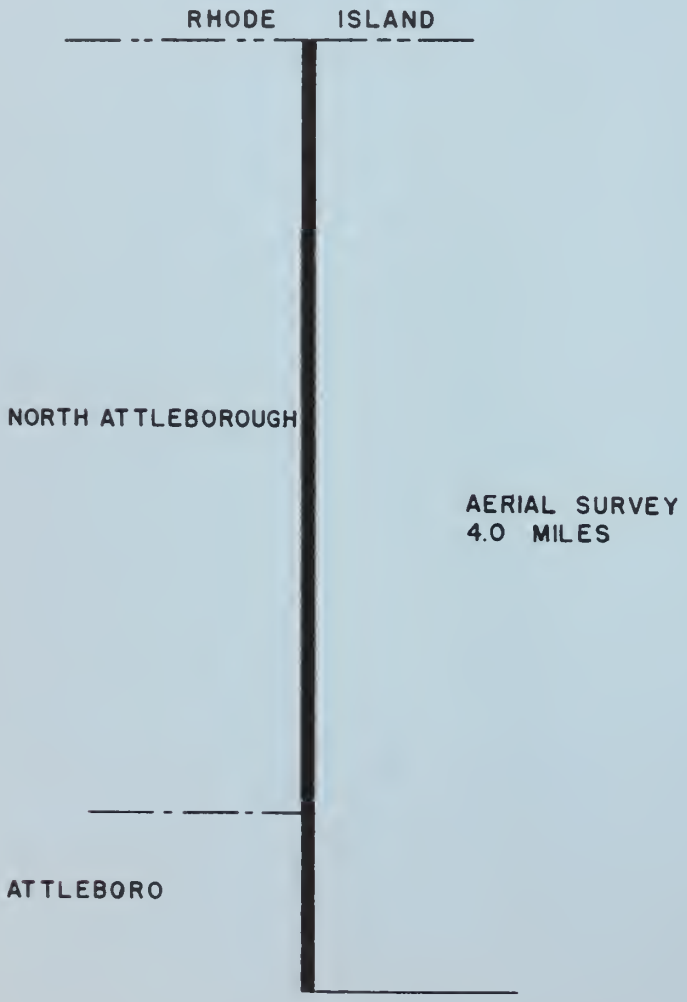
This 5.4-mile route will provide a connection between Interstate Route 91 in Springfield and Interstate Route 90 in Chicopee.

Charts shown here reflect the progress made to date on this interstate highway.



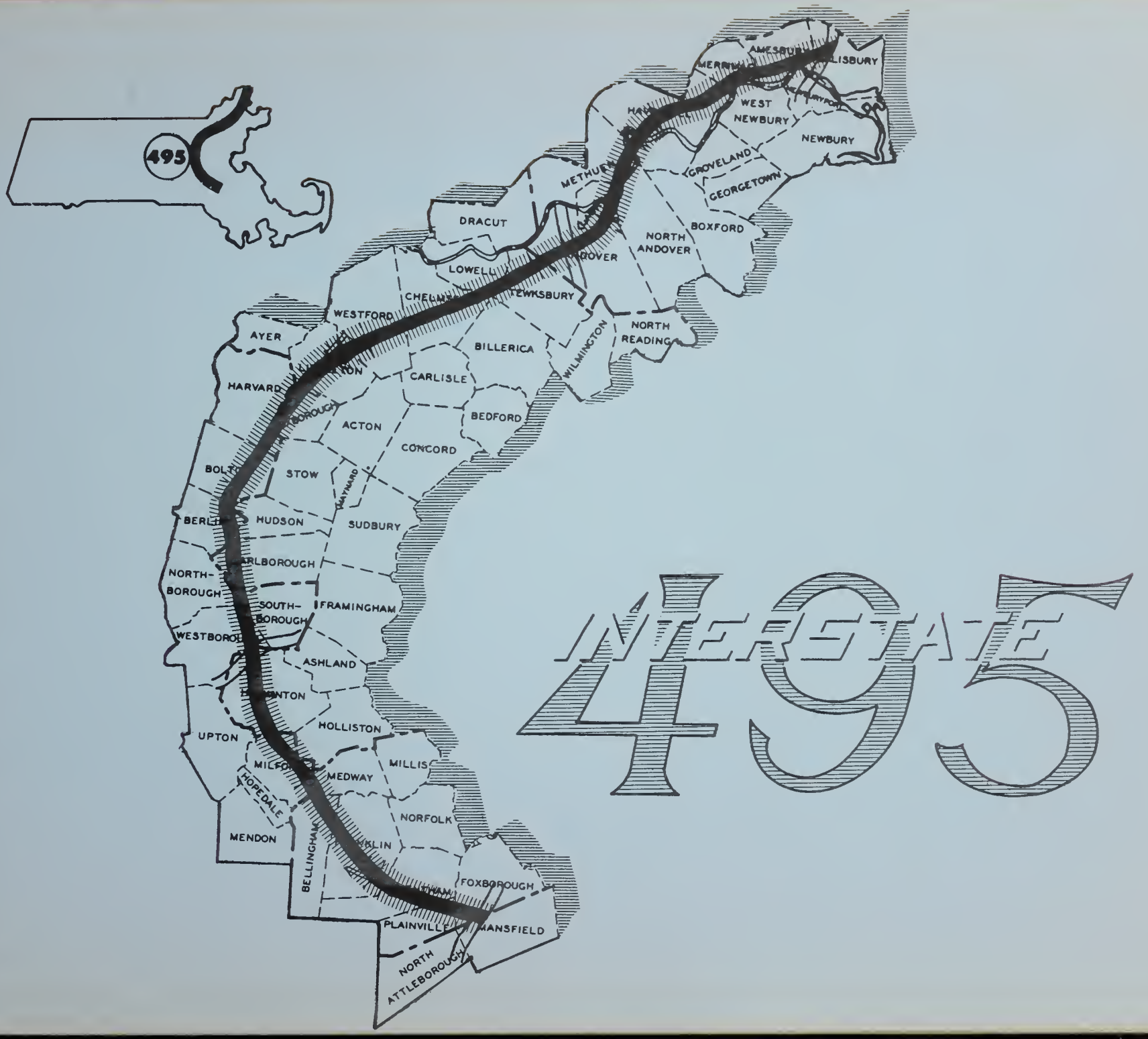
INTERSTATE 295

INTERSTATE ROUTE 295

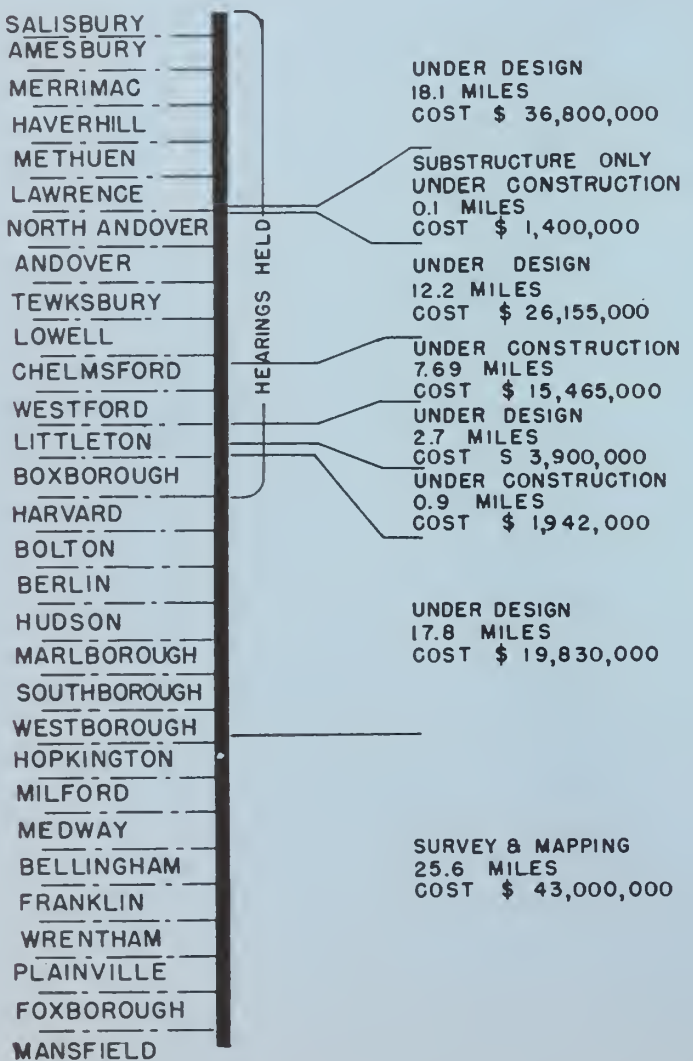


This route will join with the Providence, Rhode Island Belt Highway at the Massachusetts-Rhode Island State Line in North Attleborough and extend easterly to interchange with Interstate Route 95 in Attleboro.

Progress on the route is shown on chart at left.


495
AMESBURY
MERRIMAC
SALISBURY
WEST NEWBURY
NEWBURY
GROVELAND
GEORGETOWN
METHUEN
DRACUT
BOXFORD
NORTH ANDOVER
LOWELL
DOVER
TEWKSBURY
WESTFORD
AYER
BILLERICA
NORTH READING
WILMINGTON
HARVARD
CARLISLE
ACTON
BEDFORD
CONCORD
STOW
HUDSON
SUDBURY
NORTH-BOROUGH
SOUTH-BOROUGH
FRAMINGHAM
ASHLAND
HOLLISTON
UPTON
MILLIS
MEDWAY
HOPEDALE
NORFOLK
MENDON
BELLINGHAM
FOXBOROUGH
PLAINVILLE
MANSFIELD
NORTH ATTLEBOROUGH
INTERSTATE
495

INTERSTATE ROUTE 495



This super highway will form an 85-mile arc from Salisbury to Foxborough, about 17 miles outside of Route 128.

The cities of Lowell, Lawrence, Haverhill and Marlborough will be relieved of heavy through traffic which now congests their business areas upon completion of segments of the expressways within these communities.

New land use will be created in communities not only traversed by the new highway but also in other communities within a broad area which will be influenced by the road.

The chart at left reflects the current progress of this interstate route.

INTERSTATE ROUTE 495

Shown above is an artist's conception of one of many designs studied for the Merrimack River crossing of Interstate Route 495 between North Andover and Lawrence. The area shown is but a small section studied to provide highway proposals for traffic relief in the Lowell, Lawrence and Haverhill Metropolitan Areas. The substructure for the river crossing in this location will soon be under construction.

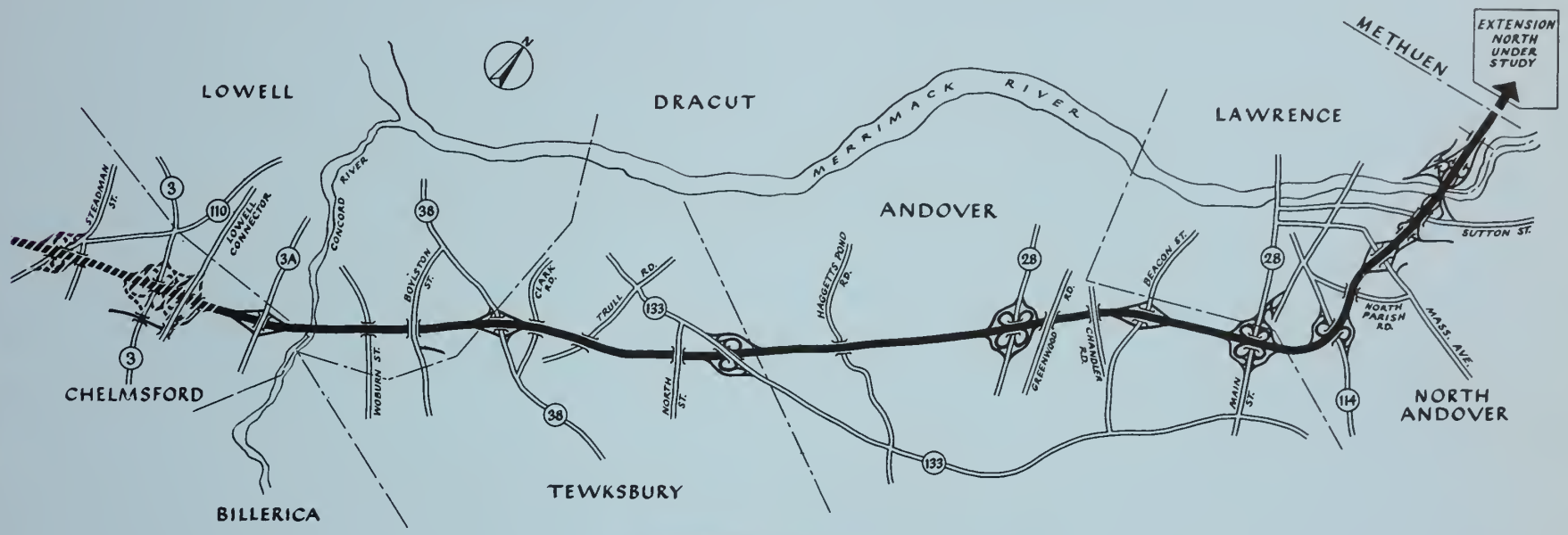
INTERSTATE ROUTE 495

THE *OUTER BELT*

under construction

Shown on these pages are the segments of Interstate Route 495 which have been placed under construction this year in the Communities of Littleton, Westford, Chelmsford, North Andover and Lawrence.

INTERSTATE ROUTE 495



under construction

A total of 8.6 miles worth a total of $18,807,000 have thus far been contracted for on this important route.

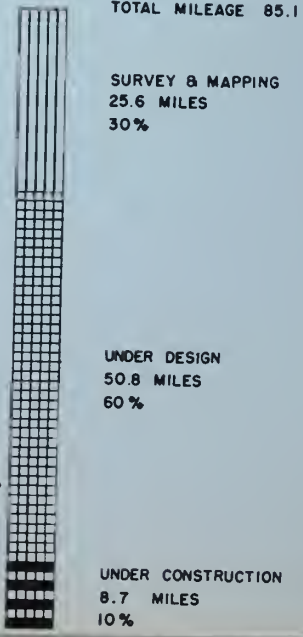
Noteworthy is the start of work soon on the sub-structure of the North Andover-Lawrence bridge over the Merrimack River.

The interchange at Route 3 and the Lowell Connector is the largest earth-handling contract for a highway in the history of the Department.

INTERSTATE ROUTE 495

Shown above is the 18.1-mile section of Interstate Route 495 which is under design. The estimated cost for this segment is $36,800,000.

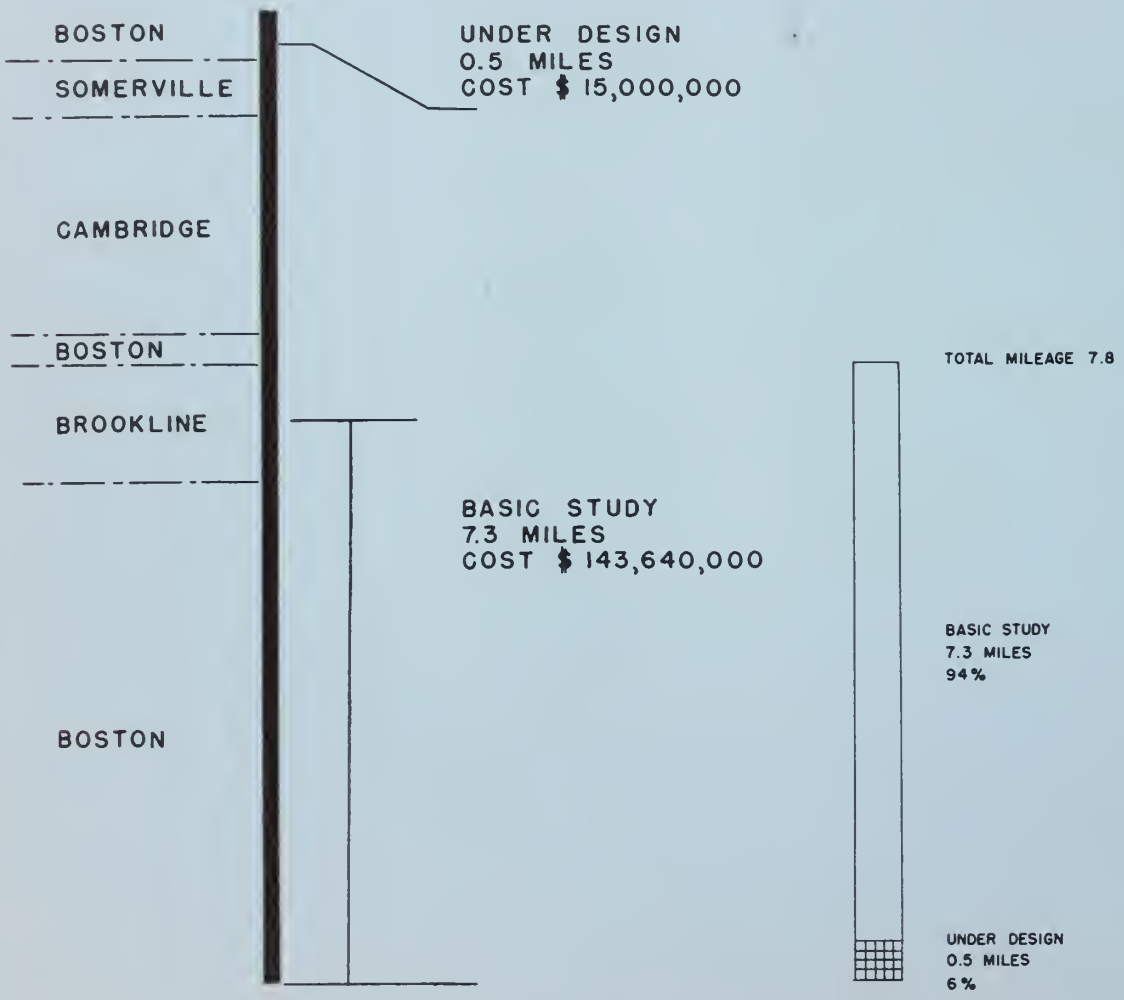
Chart at right shows the progress in various categories of the entire 85.1-mile expressway.



695

INTERSTATE

INTERSTATE ROUTE 695

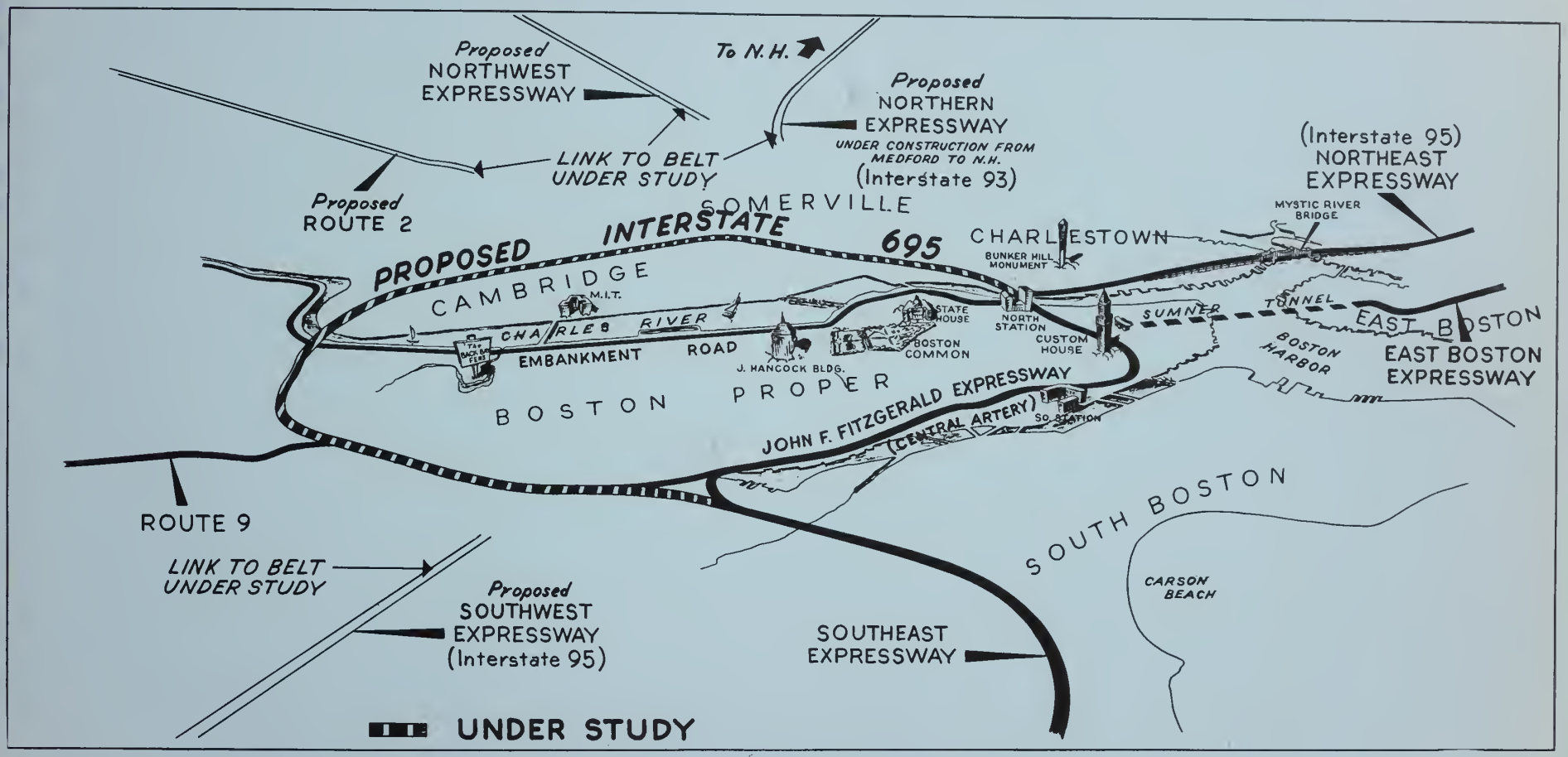


This interstate route will form the so-called Boston Inner Belt which will describe an arc between Charlestown and Roxbury and traverse the communities of Somerville, Cambridge and Brookline.

The route will function as a collector-distributor roadway in the same manner as the Boston Central Artery now functions.

The chart at left describes the current progress on this important highway.

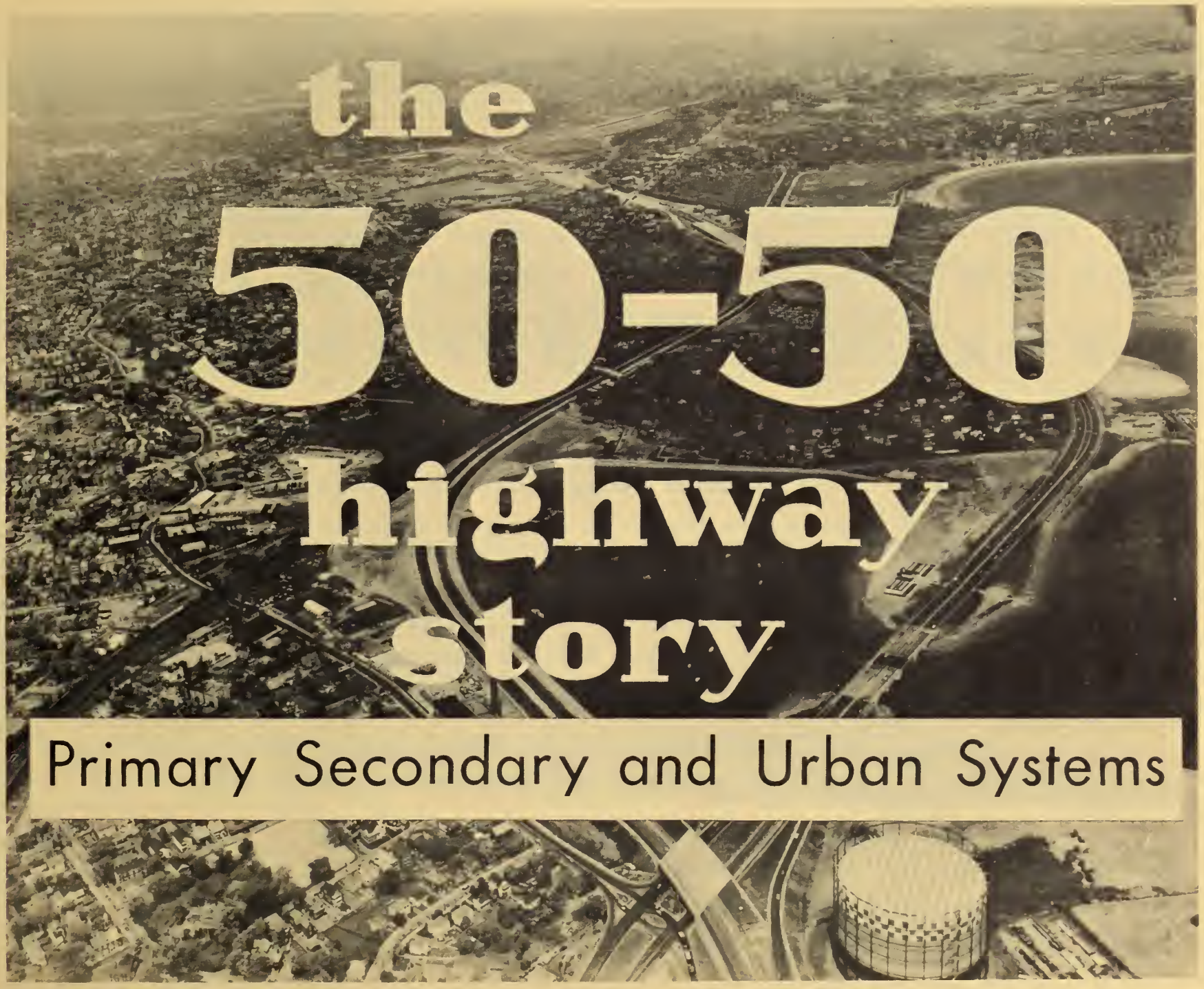
INTERSTATE ROUTE 695



Proposed Interstate Route 695 will form the westerly side of the so-called Boston Inner Belt to which various radial highways ultimately will connect.

INTERSTATE ROUTE 695

This revolutionary off-street parking plan offers a bold challenge to highway planners throughout the Nation. With permissive legislation at Federal, State and local levels, Expressway-Garages could be incorporated into the interstate highway segments planned for cities throughout the Country. No vehicle using the facilities would use city streets since access to and from the expressway only would be privided. Such a facility would free city streets in business areas for customer parking since the all-day parker would be attracted to use the expressway-garage because of its convenience.


the
50-50
highway
story
Primary Secondary and Urban Systems

THE 50-50 HIGHWAY STORY

DESCRIPTION

The "50-50 Story" pertains to our 2348-mile network of primary, secondary and urban highways, commonly referred to as the "ABC System", which link together metropolitan areas throughout the Commonwealth.

PRIMARY....major highways

SECONDARY..feeder roads and lesser major highways

URBAN.....extensions into cities

IMPORTANCE

Located throughout the length and breadth of the State, these roads are vital to the economy of Massachusetts cities and towns.

Their function as feeders to Interstate expressways is essential to the success of the Federal Interstate-Defense Highway System.

CONSTRUCTION AND MODERNIZATION PROGRAM

A continuing construction, widening and resurfacing program is in operation to bring our ABC roads up to safe operating standards so that they may carry their proportionate share of the future traffic of the State.

For efficiency and safety, elimination is being effected of blind curves and grades, narrow roads and bridges, soft shoulders, and also elimination of the railroad crossings that each year take their tragic toll of lives.

FINANCING

This system of highways is financed 50% by the Federal government and 50% by the state.

ROUTE C1

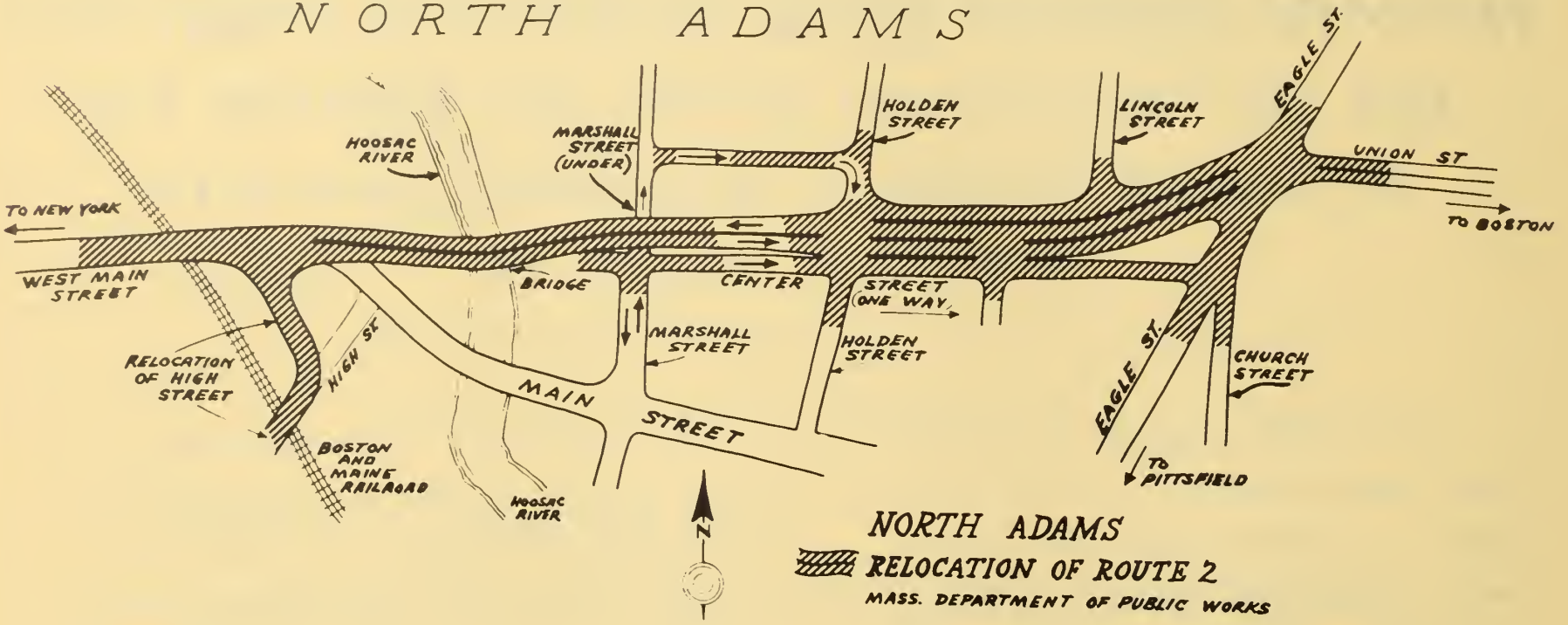
PROPOSED EXTENSION OF THE EAST BOSTON EXPRESSWAY AND THE IMPROVEMENT OF THE LEE—BURBANK AND McCLELLAN HIGHWAYS TO A CONNECTION WITH INTERSTATE ROUTE 95

Recent traffic studies have shown that improved highway facilities will have to be provided along the Lee-Burbank and McClellan Highways (Route C1) in East Boston to handle the estimated traffic anticipated in the future.

Evidence of traffic congestion is appearing along Route C1. The Department has undertaken studies to determine the nature of what these improvements should be and, if a new highway is recommended, what the location should be.

Initial construction is expected to start within a year.

ROUTE 2



Recently completed is the $2,000,000 North Adams Route 2 relocation. The new road provides a relief route for through traffic which formerly congested the downtown business area.

ROUTE 2A

PROPOSED
CITY STREET IMPROVEMENTS
FITCHBURG
MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS

This $1,700,000 proposal in Fitchburg will provide increased capacity for east-west traffic movements through the downtown area of the City.

The U. S. Bureau of Public Roads has been requested to approve the project and include it in the Federal Aid Primary System. A public hearing was held on May 21, 1958 and the project is now in the design stage.

ROUTE 28

UNDER CONSTRUCTION

RELOCATION RTE. 28 FALMOUTH

This 2.6-mile, $2,500,000 section of New Route 28 in Falmouth is under construction. The new road will be a relief route for the western part of the town where, during the heavy travel season, traffic is congested.

The new divided highway segment will be completed before the end of this year.

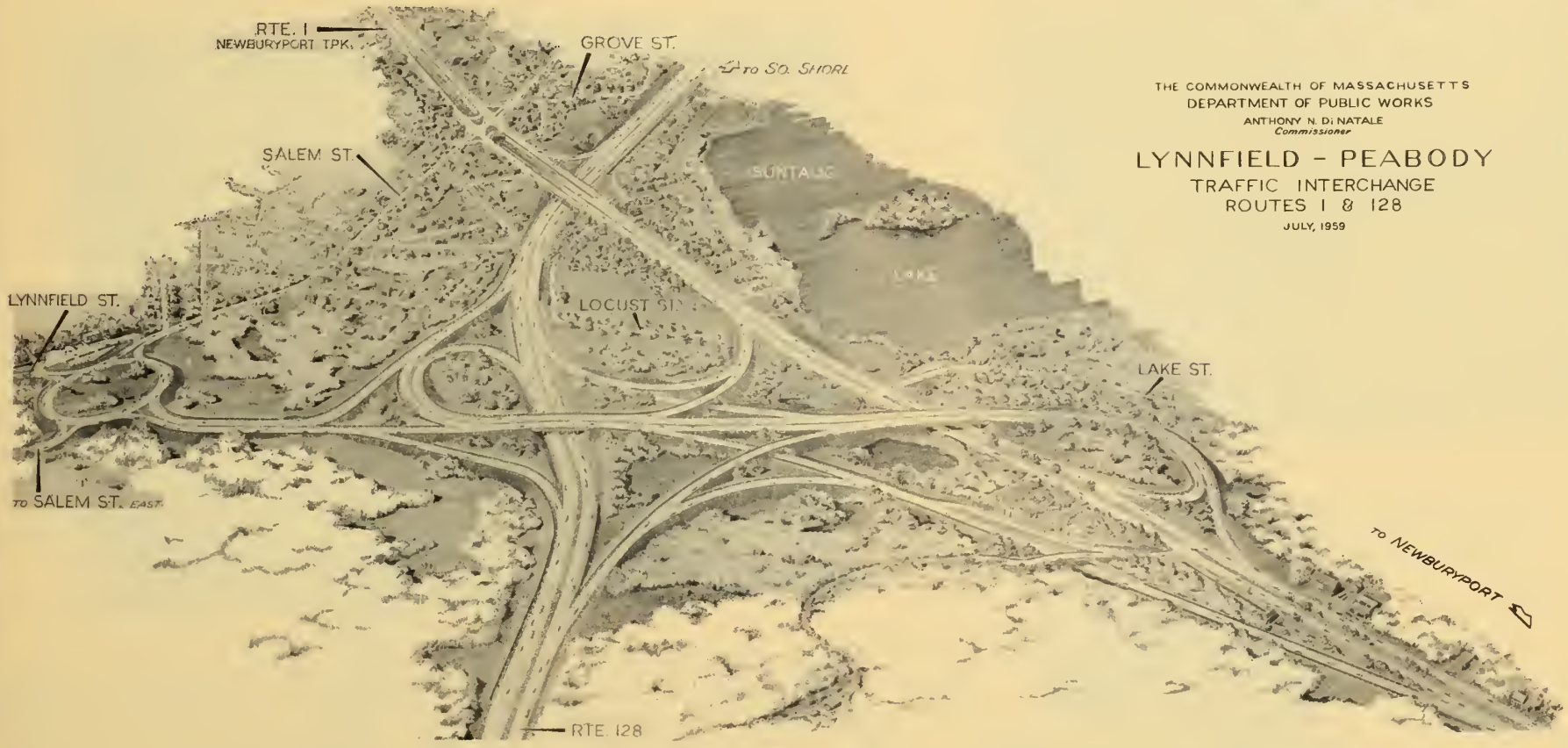
MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS

EXPRESS HIGHWAY SYSTEM

IN

SOUTHEASTERN METROPOLITAN BOSTON AREA

ROUTES 1 & 128 LYNNFIELD

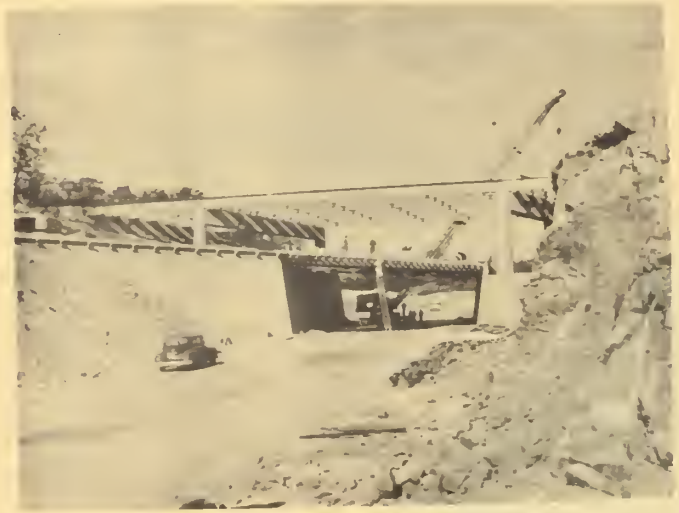


THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
ANTHONY N. DiNATALE
Commissioner

LYNNFIELD - PEABODY
TRAFFIC INTERCHANGE
ROUTES 1 & 128
JULY, 1959

This $6,000,000 project will eliminate one of the State's worst traffic bottlenecks and will afford uninterrupted access and travel for motorists at the junction of these two vital highways. This is part of the program which will widen Route 128 North between Routes 9 and 1. This is the seventh in a series of contracts to get under way on the improvement of the Circumferential Highway. The interchange will consist of seven bridges, a tunnel under Salem Street, Lynnfield, and ten miles of ramps, access roads and divided highway. The interchange is designed to handle the anticipated 1980 traffic load of 118,000 vehicles a day.

SOUTHEAST EXPRESSWAY



Tri-level expressway segment:
During construction and
after completion.

On September 3, 1959, the 7.5-mile section between Braintree and Hingham was open to traffic. However, only a single roadway will serve two-way traffic until the Fall, when the balance of the section is finished. Also in the Fall, the 4-mile section of New Route 128 between the Fall River Expressway and the Southeast Expressway will be completed.

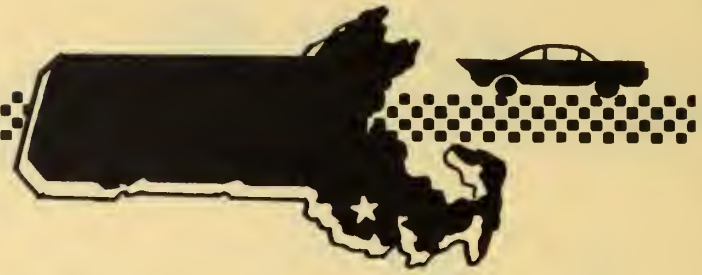
In Braintree, the Southeast Expressway's separated roadways will permit traffic to transfer to and from New Route 128. The 15.5-mile, $60,000,000 Southeast Expressway begins in Boston with its connection with the Fitzgerald Expressway and ends at a point near Route 3 in Hingham.

ROUTE 140

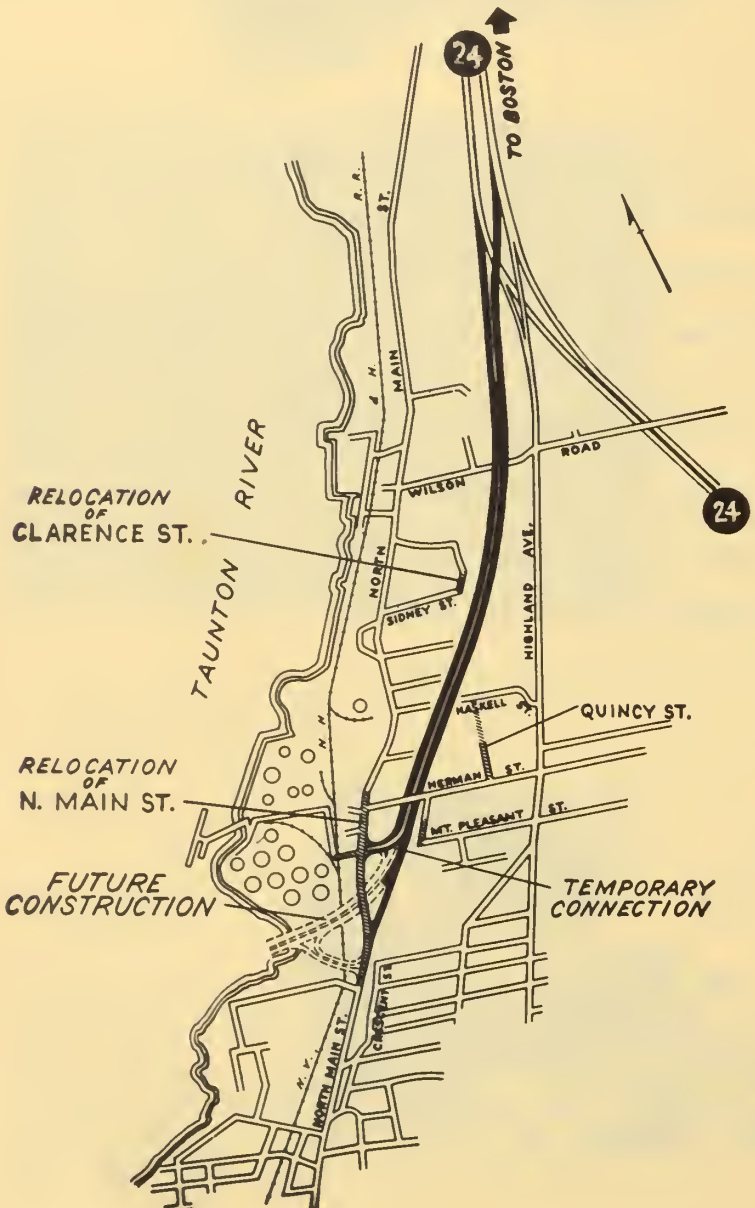
Three contracts worth nearly $1,500,000 are now under way to link relocated Route 140 and Route 24 in Taunton.

By the summer of 1960, expressway travel between New Bedford and points north will be possible with the completion of this work.

WESTERN EXPRESSWAY



FALL RIVER

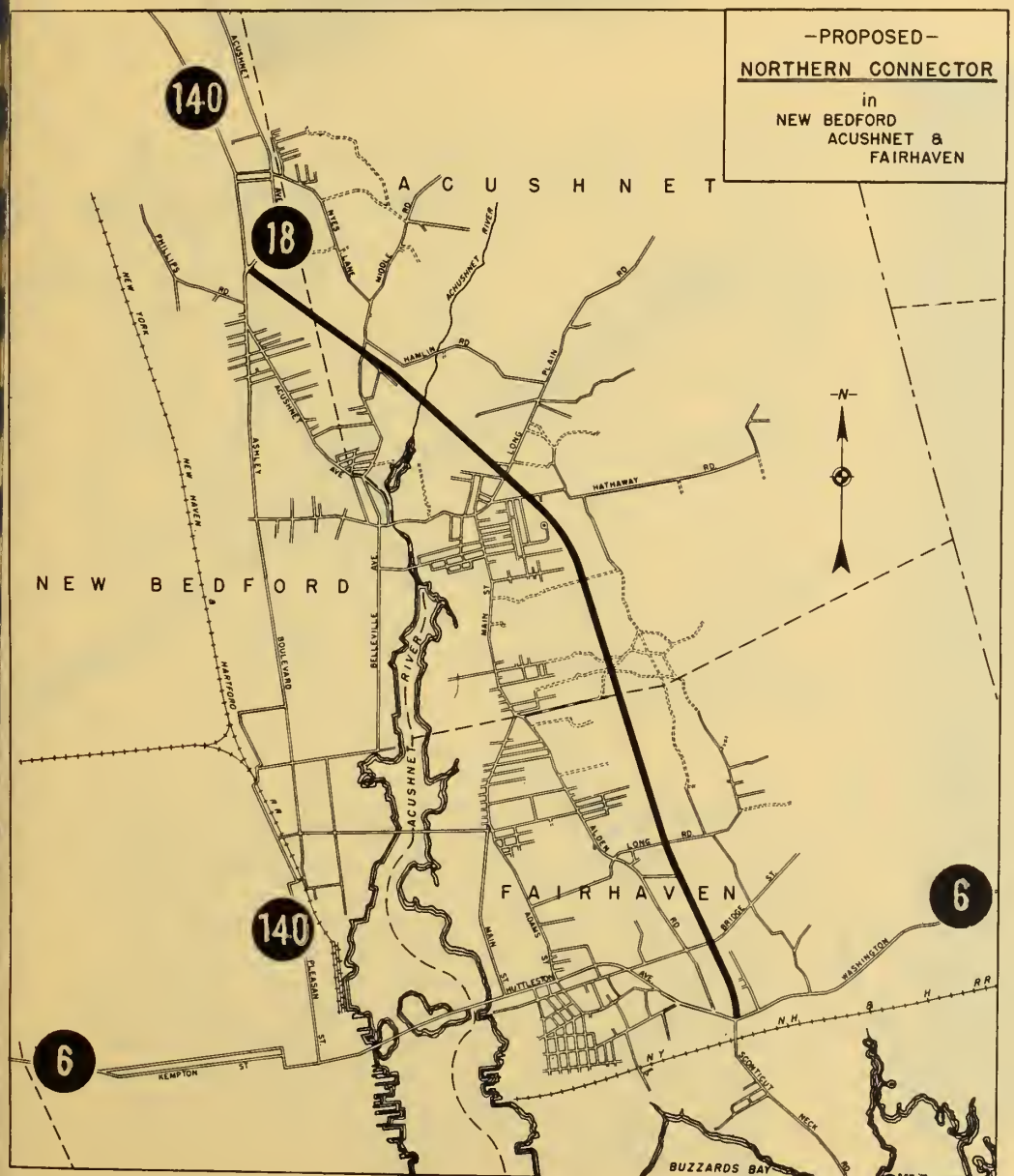


Extending 1.7 miles southerly from a connection with Route 24 to North Main Street, the Fall River Western Expressway's first section is under construction.

This important highway will extend southerly ultimately to connect with the proposed Interstate Route 195 extension through Fall River.

Construction of the first contract, with a bid value of $2,300,000, will be completed in the Fall of 1960.

NORTHERN CONNECTOR

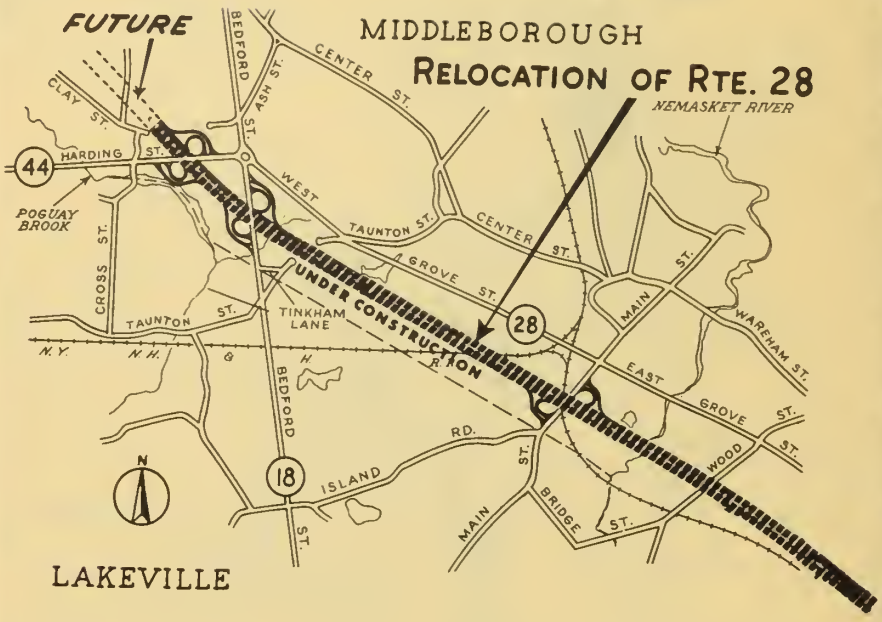


This 5.4-mile proposal was presented at a public hearing at the Acushnet Town Hall on June 11, 1959. Estimated to cost $1,200,000 to build, the Northern Connector will form part of a loop to provide traffic service to the New Bedford Metropolitan Area. The other parts of the loop will be formed by the extension southerly of Route 140 and New Bedford's segment of Interstate Route 195.

This highway system will give New Bedford a feeder system on both sides of the city in addition to a downtown expressway.

ROUTE 28

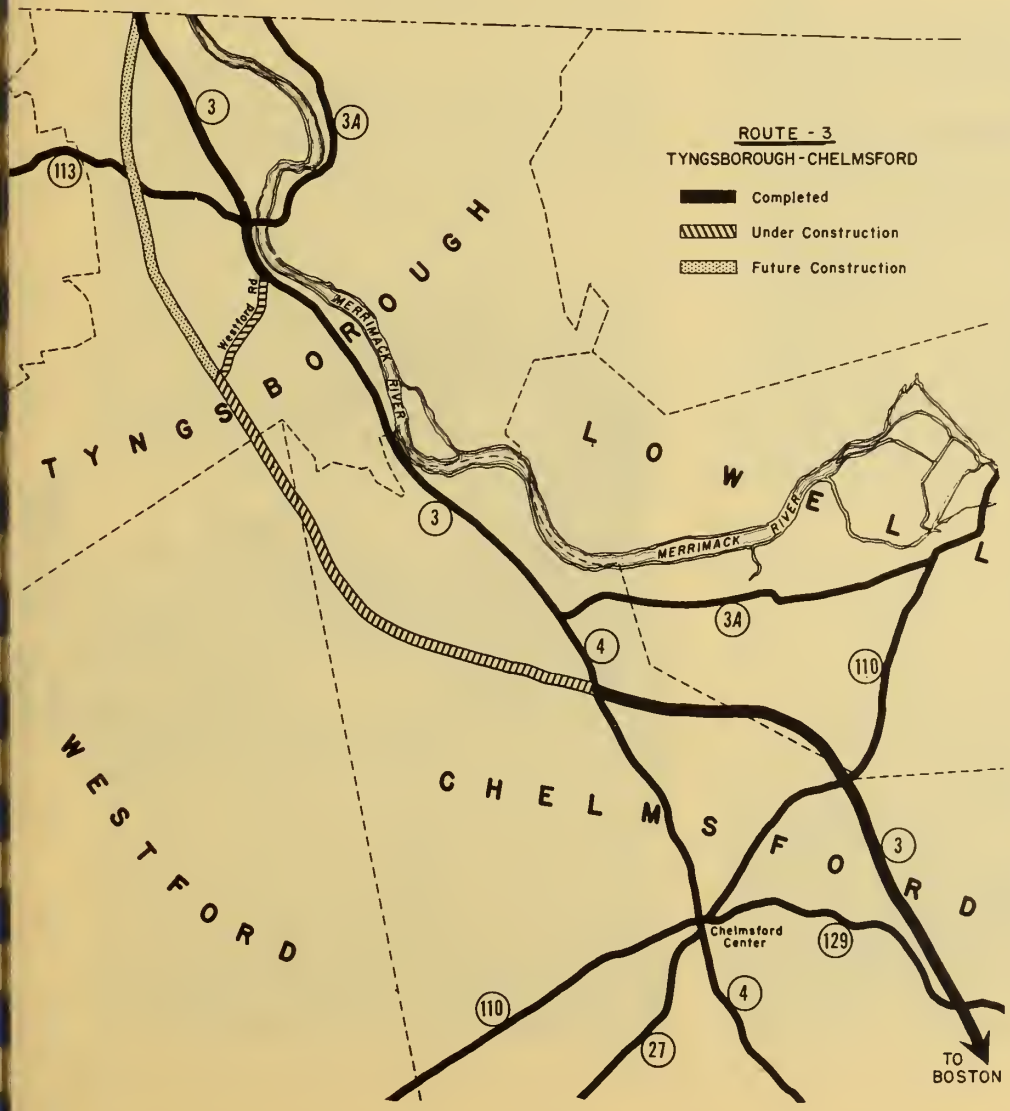
Wareham Street interchange on New Route 28 in Middleborough.



Due for completion early next Spring is an 8-mile section of New Route 28 in Middleborough. The map shows the limits of Contract #2 and the aerial views Contract #1 looking northwesterly from the Wareham Street interchange. This important Cape Cod Feeder Route ultimately will connect with the Fall River Expressway to the northwest and Route 6 to the southeast. The new dual highway will reduce travel time more than 50% and relieve the present and inadequate Route 28.

ROUTE 3

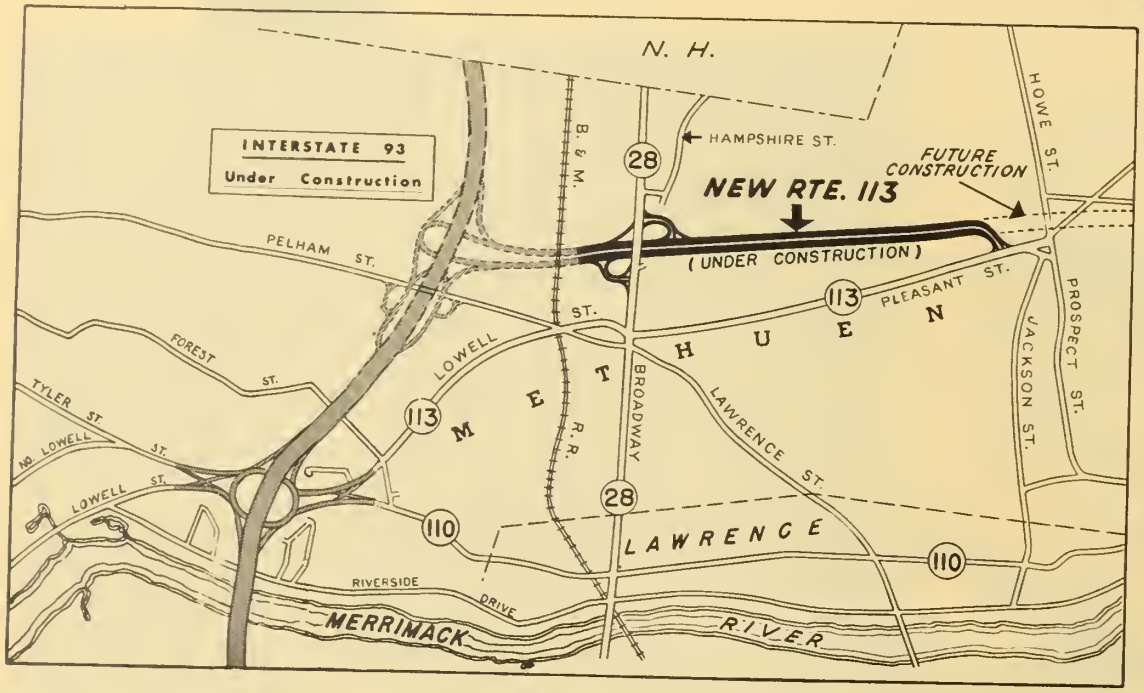
NEW HAMPSHIRE



Under construction is a 4.4-mile section of New Route 3. This $6,000,000 section will provide traffic relief on the existing route which carries heavy volumes of interstate traffic. The completion of this contract in the Fall of 1960 will extend the limited access mileage of Route 3 North to 20.5 miles from its start at Route 128. The final contract, a distance of 2.7 miles, will complete the route to the New Hampshire Line.

This work will be undertaken as Federal Aid Primary Funds are made available.

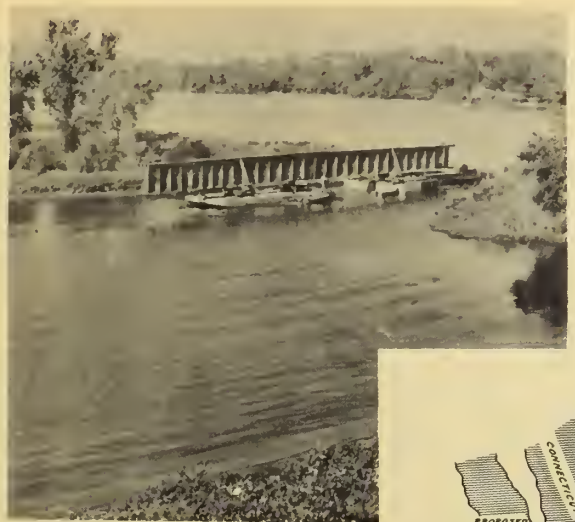
ROUTE 113



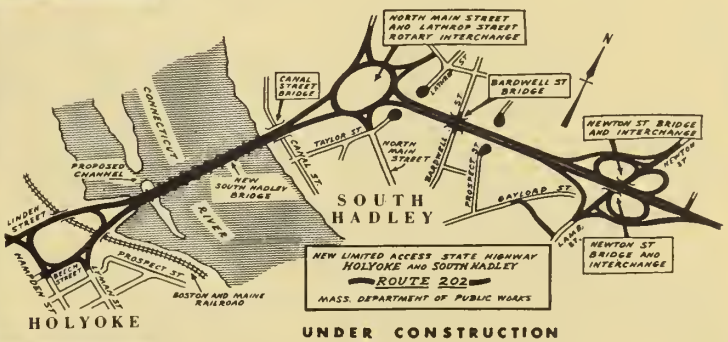
Nearing completion is the section of New Route 113, shown above. This route ultimately will be extended easterly to a connection with Interstate Route 495 in Methuen. Its westerly terminus, now under construction, will interchange with Interstate Route 93.

The combination of Interstate Routes 93 and 495 linked by New Route 113 will form an Expressway Belt Route to serve the traffic needs in the Lawrence Metropolitan Area.

ROUTE 202

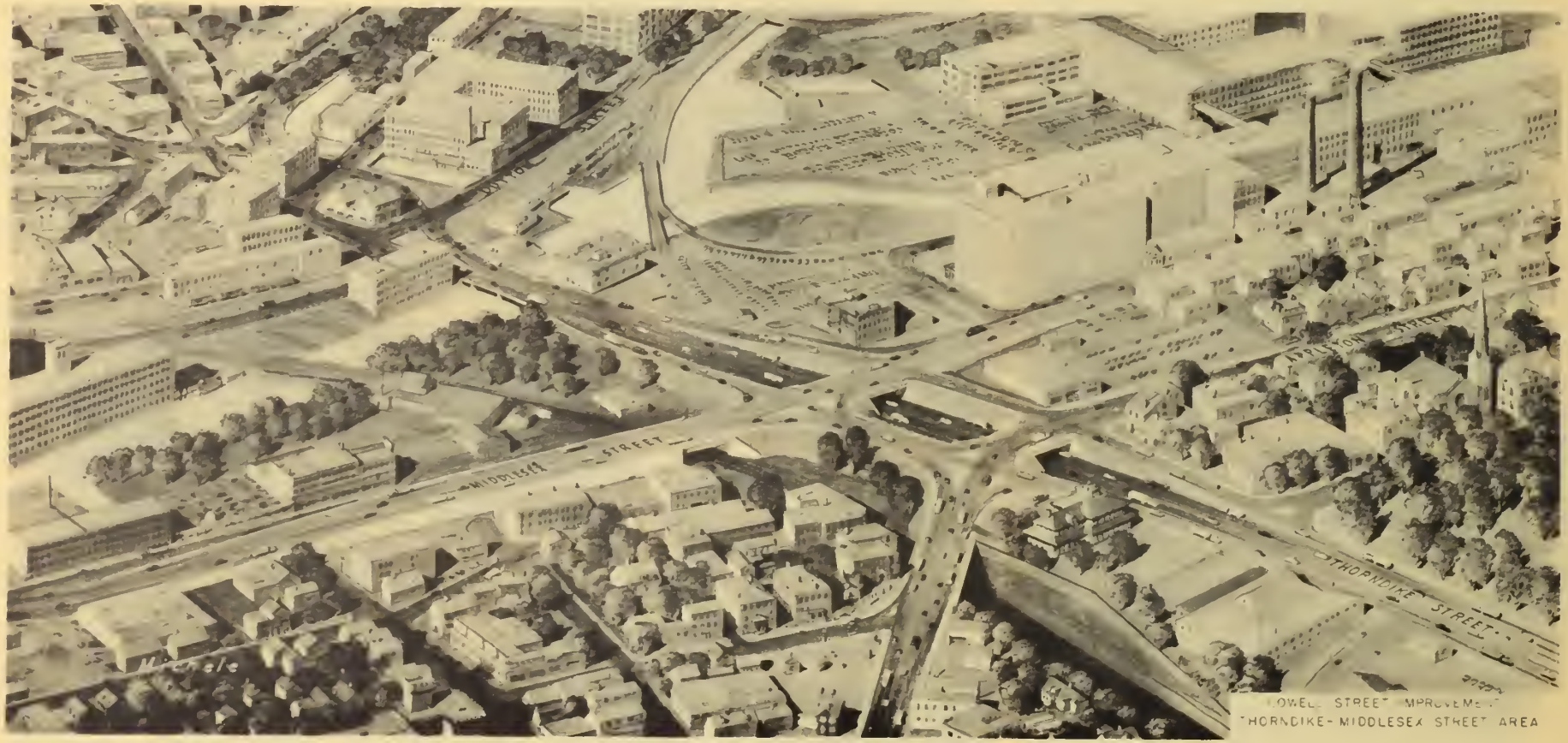


This $3,000,000 relocation project will provide the city of Holyoke with a much-needed additional river crossing to handle the heavy traffic demand generated in the South Hadley area. The new route will also serve as a feeder to the the proposed Interstate Route 91 through Holyoke.



Recorded here is the water-borne route of the final girder for the Connecticut River Route 202 bridge. The project will be completed in the summer of 1960.

LOWELL—STREET IMPROVEMENTS



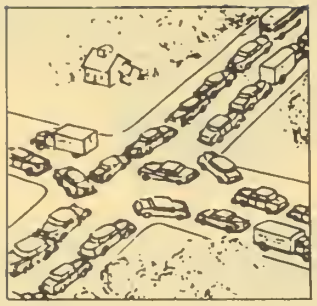
Now under construction is the $2,500,000 highway improvement in Lowell's commercially-busy Thorndike street area. The project will accomplish a two-fold purpose. It will eliminate the Boston and Maine Railroad's New Hampshire Division grade crossing on Middlesex Street and separate the present junction of heavily-travelled Thorndike and Middlesex Streets. This project, in addition to the work under way on the Lowell Connector and Interstate Route 495 will make the Lowell metropolitan area, we believe, a much sought-after region in which to work and live.

ROUTE 3 PLYMOUTH

The conversion of the Kingston-Plymouth Route 3 Bypass from a single roadway to a dual highway was completed on July 1, 1959, more than four months ahead of schedule.

ROUTE 2 ORANGE

The Route 2 Bypass, above, in Orange, Wendell and Erving was completed on October 10, 1958, fourteen months ahead of schedule.



OTHER MAJOR HIGHWAY OPENINGS

SOUTHEAST EXPRESSWAY

Boston-Quincy; From Neponset River Bridge to Furnace Brook Parkway; 2.5 miles; open on October 13, 1959

SOUTHEAST EXPRESSWAY

Quincy-Braintree; From Furnace brook parkway to Route 37; 2 miles; open on November 1, 1958.

NEW ROUTE 128

Gloucester; 2 miles
Open December 11, 1958

FITZGERALD-SOUTHEAST EXPRESSWAY

Boston; 4.5 miles; open June 25, 1959.

FALL RIVER EXPRESSWAY (ROUTE 24)

To connect with Route 128 in Randolph; 6.7 miles; June 30, 1959.

NEW ROUTE 57

Agawam; 1.6 miles; open on August 20, 1959.

SOUTHEAST EXPRESSWAY

Braintree-Weymouth-Hingham; single roadway of dual highway open for two-way traffic to expediate South Shore traffic; open on September 3, 1959.

general
projects

GENERAL AND SPECIAL PROGRAMS

PHOTOGRAMMETRY

The Department has completed reconnaissance mapping of 379 miles, and for the preparation of preliminary plans, profiles, and cross sections of 248 miles of proposed highway locations by the use of aerial photography and the science of photogrammetry. About 60% of this mileage is on the Interstate System.

Reconnaissance mapping consists of the making of maps at a scale of 1"=200' with contours at 5' intervals in rural or outlying areas, or at a scale of 1"=100' with contours at 2' intervals in urban areas.

Preliminary plans are made at a scale of 1"=40' with contours at 2' intervals and also include profiles, cross sections, and contract tracing.

The use of photogrammetry has expedited the entire highway program of the department and has made it possible to advertise projects for construction in a fraction of the time which would have been necessary using the older conventional ground methods.

As an example, one section of the Interstate System 27 miles in length was photographed for reconnaissance, mapped, located, rephotographed, and had preliminary plans ready for the Design Section in 22 months.

The time required by conventional methods would have been two or three times as long, and the cost would have been several times that of the aerial survey.

During the past two years improvements and refinements have been made in the Department Specifications for this type of work which has resulted in increased accuracy and more efficient use of the maps.

A form has been designed for the recording of the cross sections by the photogrammetric contractor which will provide for the coding of a design template on the same form and punching of the data on cards for the computation of preliminary quantities by electronic computer.

We are in the process of evaluating the feasibility of making final surveys by photogrammetric methods. Contracts were awarded last Fall and the final cross sections have been received. In addition to the sections, we are also receiving record plans of the roads as actually constructed, and aerial photography of the completed projects.

GENERAL AND SPECIAL PROGRAMS

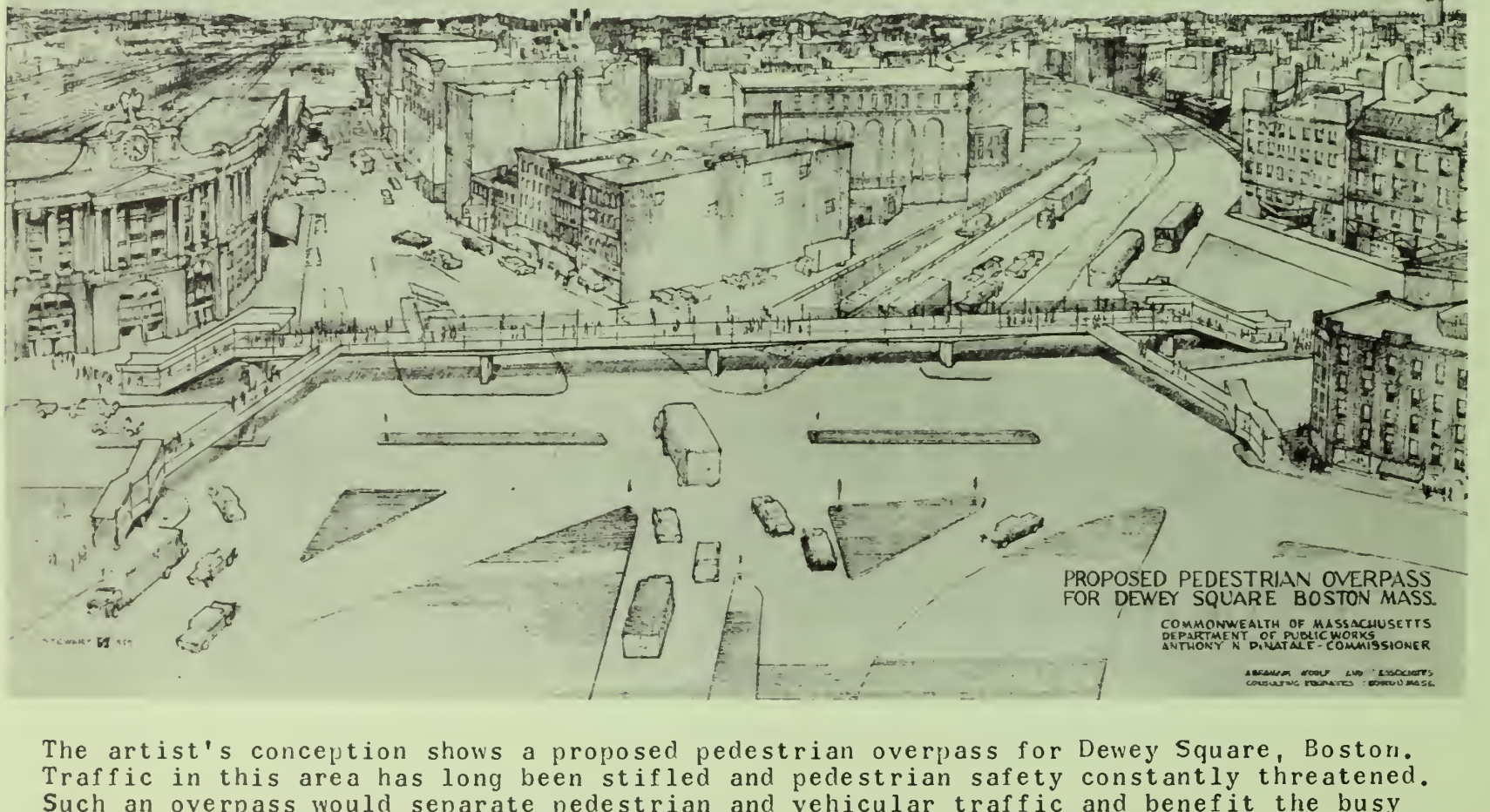
HELICOPTER

The Department of Public Works has purchased a twin-engined Helicopter.

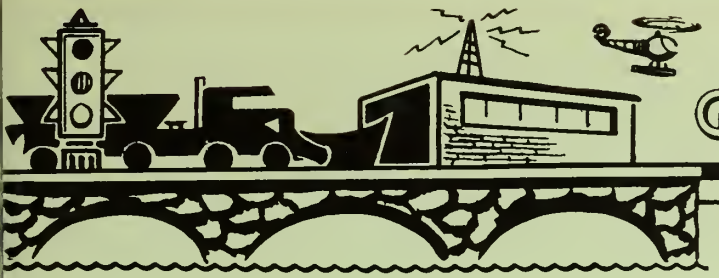
This aircraft will be used for aerial survey, topographical mapping, emergency highway problems, reconnaissance, urban parking studies, right-of-way appraisals, disaster and relief work.

It is also at the disposal of other State Agencies who at times require the use of aircraft, such as the Department of Natural Resources for spraying and State Police for traffic control.

GENERAL AND SPECIAL PROGRAMS


PROPOSED PEDESTRIAN OVERPASS
FOR DEWEY SQUARE BOSTON MASS.
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
ANTHONY N. PINATALE - COMMISSIONER

The artist's conception shows a proposed pedestrian overpass for Dewey Square, Boston. Traffic in this area has long been stifled and pedestrian safety constantly threatened. Such an overpass would separate pedestrian and vehicular traffic and benefit the busy Square. The overhead structure would serve pedestrians from the south end of Summer Street to the South Station. Auxiliary overhead access overpasses would serve Franklin Street and Atlantic Avenue as well as the rapid transit entrance in the center island. Mechanical escalators and stairways would provide for the main traffic overpass from Summer Street to South Station. Auxiliary overpasses would be served with stairways.



GENERAL AND SPECIAL PROGRAMS

PLANNING DIVISION

The Planning Division was initiated in 1956 and was assigned limited functions such as the preparations and revisions of manuals for the various Highway Divisions, the Standard Specifications and the Construction Standards.

Limited programming of funds for improving state highways and bridges is also a function of this Division as well as recommendations for reserch projects.

Now we are expanding the Planning Division which will develop a team that will coordinate functions of all the Highway Divisions, prepare long range engineering and economic planning for the Department, and program all engineering work except that which entails state aid to municipalities.

The Planning Division will be charged with the responsibility of investigating, analysing, projecting and making recommendations for the highway fund, increased research programs, legislation affecting the Department the needs requirement on all highways, future maintenance, coordinating the highway system with mass transportation systems and future land use.

GENERAL AND SPECIAL PROGRAMS

BRIDGE DIVISION

During the period of this report, approximately 170 bridges at a cost of about $26,500,000 were placed under contract for construction in 53 cities and towns throughout Massachusetts.

Of this total number of bridges approximately one-half are being constructed on the Interstate Routes. Interstate Route 495 has the largest number under construction, 27 being built in Chelmsford, Lowell, Littleton and Westford.

Twenty-four bridges are under contract for construction on Interstate Route 93 in Andover, Medford, Methuen, Stoneham, Winchester and Woburn. About one-half of these are of prestressed concrete beam design.

Interstate Route 91 has 12 bridges under construction in Bernardston, Hatfield, Longmeadow and Springfield, including in the latter city a three-level interchange.

Interstate Route 95 includes 11 bridges in Attleboro and North Attleboro, and Interstate Route 195 has 9 bridges in Rehoboth, Seekonk and Swansea.

Twenty bridges were placed under contract for the widening of Route 128 in Lynnfield, Peabody, Reading and Wakefield. Included in this group is the Route 1 tunnel under Salem Street.

The relocation of routes throughout the State accounts for 26 additional bridges. The routes and their locations are as follows: Route 102 in Lee; Route 3 in Chelmsford, Tyngsboro, and Westford; Route 67 in West Brookfield; Route 140 in Lakeville and Taunton; Route 143 in Chesterfield; Route 2 in Phillipston; and Route 7 in Sheffield.

Four bridges are under construction on the Western Expressway in Fall River, and five bridges on the Worcester Expressway in Worcester.

A bascule drawbridge is under construction over the Neponset River in Boston and Milton. Chapter 90 bridges and bridges on secondary roads account for the remainder of the structures placed under contract during the period from September 1958 to September 1959.

GENERAL AND SPECIAL PROGRAMS

FISCAL MANAGEMENT

Report on Tabulating Section

The increased activity within the Department over the last several years has caused the I.B.M. equipment and procedures slowly to become obsolete. Steps are being taken to correct this condition.

Contracts for modern equipment were made, and necessary alterations and changes of our procedures are being put into operation.

In August, 1957, a "650" Electronic Computer was delivered and placed under the supervision of the Accounting Division.

On July 1, 1959, a new payroll procedure, developed in the tabulating section, was put into operation. Briefly, this change has simplified the task of filling out time sheets, and has reduced the work throughout the Department in compiling payrolls, and related data, and in processing them for the tabulating section. It has greatly reduced key-punching and has eased the pressure in the tabulating room.

Reports pertaining to payments and expenditures of our payrolls are produced easier and in many cases four to six weeks earlier.

Also the Tabulating Section coordinates its activities with the Electronic Development Section so that this section can get the most out of its engineering efforts. The Electronic Development Section depends upon the Tabulating Section to insure success.

GENERAL AND SPECIAL PROGRAMS

TRAFFIC ENGINEERING DIVISION

During the past year, this Division recommended the erection of "Yield Right of Way" signs. After approval of the necessary regulation these signs were used on ramps entering certain expressways.

During the planning for the control of traffic prior to the opening of the tunnel section of the Fitzgerald Expressway and the Southeast Expressway, Television Control was proposed and designed by this Division for use in the tunnel.

The system has proved most valuable in keeping a constant check on traffic. In the case of a breakdown in the tunnel, a Public Address System permits the operator at the television control center to warn approaching motorists to slow down. The operator also can close the affected lane to traffic until the disabled vehicle is removed.

Television Control Center of the Tunnel Section of the Fitzgerald Expressway.

GENERAL AND SPECIAL PROGRAMS

TRAFFIC ENGINEERING DIVISION

The activities of the Traffic Engineering Division have continued at an accelerated pace during the past year.

In recognition of the effectiveness of the Traffic Division's program the Institute of Traffic Engineers recently presented the Commonwealth an award "for outstanding performance in Traffic Engineering." This award was under the sponsorship of the National Safety Council and was the fourth award for efficient traffic engineering received by Massachusetts in the last five years.

The main phases of the Traffic Division's activities include Highway Planning, Highway Design, Accident Analysis, Traffic Signals, sign installation, pavement marking, safety lighting, traffic regulations and speed control.

Recent special efforts in highway safety analysis include the Accident Cost Study now being conducted by the Department in cooperation with the Federal Bureau of Roads and the Registry of Motor Vehicles. The Division also has been conducting a survey in preparation for analysis of all accidents occurring on every mile of State highway in Massachusetts. This will be done on punch cards and will greatly assist in simplifying the preparation of reports proposing remedial measures in order to correct hazardous locations through engineering means.

For highway safety, the Traffic Division posts lane-use reminders on all new expressways.

GENERAL AND SPECIAL PROGRAMS

The proposed Inner Belt Highway around Boston, now under location study, lends itself to a new idea in highway development. Qualified experts have informed us that it would be both possible and practicable to erect buildings not only on land adjacent to the highway but over the roadway itself. If we can carry out this idea, the Inner Belt Highway could help solve both traffic and economic problems and play an important part in revitalizing Boston by attracting new business and creating new tax-producing property.

It will be necessary to demolish some taxable property to make way for the new highway and we are confident a greater amount of new property can be built along the Inner Belt Route.

One of the main features of this plan is that there would be no traffic problem involved in driving to and from buildings located over or adjacent to the proposed expressway because ample parking facilities could be provided to meet any need.

Such a tax-yielding plan is applicable to every major metropolitan area in the Nation where new expressways are planned.

GENERAL AND SPECIAL PROGRAMS

RIGHT OF WAY DIVISION

The Right of Way Division procures all necessary land or rights in land for the construction or reconstruction of all State highways throughout the Commonwealth. This Division also assists in acquiring, by purchase, land for the Maintenance Division and serves in an advisory capacity, at the direction of the Commissioner, to other State Agencies.

Following is a general outline of the work involved in land takings for highway purposes:

1. Determining preliminary estimates on the relative land damage costs for alternate study routes.

2. Appraising properties affected by land taking for highway purposes.

3. Negotiating settlements of all cases involved in State highway construction.

4. Assisting the Attorney General's Office in cases where petitions are brought for the assessment of damages.

It is anticipated that the accelerated Interstate and other State highway projects will increase this Division's work load for land acquisition to approximately $25,000,000 annually.

Prior to the 1949 Bond Issue and the Accelerated Highway Program, the Division's records show that for the one year ending June 30, 1949, there were 33 new projects which involved 260 land damage cases with an alottment of $2,650,000.

For the one year ending June 30, 1959, which included a portion of the Interstate Highway Program, the Division's records show 91 new projects, with about 3265 land damage cases and an allotmemt of $20,000,000.

At the present time this Division is handling the following major projects, parts of which are directly connected with the Interstate Highway Program:

1. Route 91 - Springfield to Greenfield
2. Route 93 - Somerville to Medford
3. Route 95 - Attleboro to Foxboro
4. Route 195- Swansea to Fall River
5. Route 290- Auburn to Southboro
6. Route 495- Stow to Salisbury

GENERAL AND SPECIAL PROGRAMS

MAINTENANCE DIVISION

In September 1958, 2348 miles of State highway and 1412 bridges were being maintained by the Maintenance Division. During the period from September 1958 to September 1959, 32 miles of highway and 41 bridges were added to the State system.

To give the traveling public the best riding surface possible, the maintenance division utilized a new method of surface treatment this year on an experimental basis. The results have been very gratifying and plans for expanding the use of the new method are underway. The material used is called Class I, Dense Bituminous Concrete. Type ST, and it is placed to a depth of 3/8 of an inch.

20 miles of State highway were resurfaced at a cost of $831,800.00.

70 Betterment projects were completed:

46 Highways	$226,210.00
13 Roadsides	60,540.00
11 Bridges	100,000.00

The above work consisted of correcting bad drainage conditions; sidewalk preparatory work; installation of guard rail; shoulder hardening; berm and curb work; tree planting; rest area development; sight distance improvement; erosion control; replacing bridge sidewalks; waterproofing bridge decks; resurfacing bridges and improvement of bridge sidewalks; curbs and fences.

The Maintenance Division is responsible for improvements and reconstruction of State Institutional Roads and State Forest and Park Roads.

During this period four Institutional road projects were completed at a cost of $100,000.00 and four State Forest road projects at a cost of $114,800.00.

Snow and Ice Control

During this winter, snow and ice control operations were performed on 2267 miles of State highways and under the cooperative plowing program 493 miles of town roads.

The winter of 1958-1959 deposited an average of 59.8 inches of snow across the State. There were four major storms and approximately 20 minor storms.

This winter, in contrast with the past few years, had less heavy storms but an increase in storms of light snowfall along with more severe cold weather. As a result plowing was reduced but sanding and salting increased.

The following quantities of material were used in keeping the pavements clear of ice and snow:

Sand	477,000 tons
Sodium Chloride	38,115 tons
Calcium Chloride	2,080 tons

The overall cost of snow and ice control operations was approximately $6,800,00.00.

GENERAL AND SPECIAL PROGRAMS

HIGHWAY INVENTORY

In previous years, an annual inventory of State roads was taken to determine their condition - "good, fair or poor". This Department now keeps a perpetual inventory so that the condition of every mile of State highway can be accurately determined at a glance.

HIGHWAY CLEANING

Sand and dirt accumulated over the winter period has long been a hazard to motorists and a cause of innumerable accidents occasioned by skidding in braking. Studies showed that by putting this work out on competitive bids, there has been a considerable saving to the Department and an increase in the safety factor.

STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES

After several conferences and discussions with the New England Road Builders Association, this Department made changes in our specifications designed to put into effect the latest modern construction practices.

Also a review of the wording of the specifications is currently being made to eliminate wording which is not clear or specific.

The purpose of this is to eliminate any misunderstanding of obligations between the contractor and the Department of Public Works, which might delay the scheduled completion of a highway project.

SAFETY SECTION

The Safety Section has the responsibility to educate our employees in the every day use of accident prevention measures.
This is accomplished by periodic inspections and safety talks given to personnel along with safety committee meetings in the Districts by Safety Inspectors.

The Safety Section has also, in conjunction with the Division of Beaches, given the first Seminar ever conducted by the Department.

During the past three years, we have not had a fatal accident to any of our employees pursuing their departmental duties.

Eight hundred fifty-seven employees are graduates of the Standard First Aid Course given by our Safety Inspectors.

In several cases, the training has been put to practical use on our highways when our employees have administered First Aid to victims of motor vehicle accidents.

GENERAL AND SPECIAL PROGRAMS

ENGINEERING SURVEY

The nationally recognized management firm of Stone and Webster has been engaged to conduct a survey and make recommendations for the improvement of the organized and operation of the Department. The duties of the firm will be:

To study the existing organization structure of the State Highway Department and to recommend changes, if any, required to achieve the most efficient and most economical results in anticipation of the projected highway program for the next decade; to review the duties and responsibilities of all personnel, existing lines of authority and to recommend changes, if any; to review present job specifications and recommend needed changes, if any; to review present methods and procedures and to recommend advisable changes that will improve efficiency or provide economies; to review present departmental cost accounting and budgetary control procedures and reporting, relative to operations, maintenance, and construction, and to recommend changes, if any; to provide supervisory staff with necessary cost information to gauge efficiency of the various functions and improved methods for the substantiation of budget requests; to review the operations of the department as they relate to other state departments and governmental agencies and such other matters as may affect the strengthening and may improve the operation of the Department of Public Works.

ADDITIONAL SAFETY MEASURES

The Department's Safety Program now includes protection for the public against violent weather disturbances through a warning system.

Along with their regular duties Public Works maintenance foremen will act as tornado spotters for the U.S. Weather Bureau.

Public Works maintenance forces are continually out on our highways keeping them in good travel condition. They are in the position to keep a wide check on the weather across the whole state.

Each unit is equipped with a two-way radio.

If a severe storm or tornado is spotted, the information is radioed to Boston Headquarters and immediately relayed to the Weather Bureau. As soon as the storm is spotted, its course can be tracked and relief measures started.

GENERAL AND SPECIAL PROGRAMS

SURVEY INSTRUMENTS

This year the Location and Survey Section has made numerous changes in location and survey procedures, to make use of the latest instruments and electronic devices.

To speed surveys on the Interstate System, the Department purchased a Tellurometer. The Tellurometer is a unit made up of a pair of instruments, used for measuring distances electronically.

We have used the Tellurometer to measure distances in the range of 4,000 to 25,000 feet and, at these distances, have obtained accuracies equal to or better than by conventional methods of measuring with a steel tape.

The big advantages are in time and convenience. A distance of any length can be measured by the tellurometer in about three-quarters of an hour, as compared to a measurement of a mile long line by conventional methods, which would take about four hours.

Other modern instruments purchased recently are also providing great savings of time in the preparation of highway plans and specifications.

GENERAL AND SPECIAL PROGRAMS

HIGHWAYS AND STRUCTURES

EXPEDITERS

As the work load of the Department increased, it became apparent that in order to insure the best liaison between the Department and our outside Design Engineers, we would have to separate the Department's engineers, who were to follow these projects, from the projects being worked up in the Department.

Therefore, a group of our own engineers were organized under the title of "Expediters" whose duties were to act as liaison engineers between the Department's Desing Engineers and the outside Design Engineers.

Each Expediter is assigned to several outside Design Engineers whose projects he follows from their original inception to conclusion when the projects are advertised for bids.

The duties of the Expediters are many and varied. He must review the various phases of the preparation of the basic plans and basic designs to final design plans. He must follow each project through the approval stages of design by the department's Design Engineer and the Bureau of Public roads. He must review the project in its final stages of design, estimates and specifications for its preparation for advertising for bids.

He must correlate all phases of the work with the various divisions within the Department and all private and public utilities.

The creation of this section has proved its efficiency in the expedition of our expanded highway program.

ELECTRONIC COMPUTER

During the fall and early winter of 1957, work was begun on the development of a series electronic computer programs to increase the efficiency of various divisions throughout the Department. Training of necessary personnel for the programming of these various divisions for which these programs were to be used, consumed a great deal of the original time and effort; however, within a relatively short period, an effective program library was developed and put into productive use. New problems are constantly being resolved, and the resulting programs added to the computer library. At present, less than two years after the beginning of this area

- Continued -

GENERAL AND SPECIAL PROGRAMS

of development, the computer is being used by the Bridge Division to design bridge beams. The Highway Division is making use of the computer for various problems in alignment geometry; Survey and Location Engineers find the computer to be of tremendous value in traverse computation, and complete checking of baseline measurements from field notebooks. The Traffic Division has made use of the computer for the annual Loadometer survey, and to develop traffic contour information. This division is planning extensive use of the computer for other problems requiring the processing of large quantities of data in the near future. Computation of the side lines of location by the Highway Layout Section has long been a time-consuming problem.

The computer is now doing a great deal of the routime mathematics involved in this field, freeing the engineers in this section for other important phases of the work.

Our present computer library consists of one-hundred and twenty programs.

We look forward to increasing the applications of our existing programs throughout the Department, as well as to expanding our present library as new programs are developed.

MODIFIED PEAT BORROW

For years, Peat was a useless product excavated and discarded when building roads on new location.

Today, as a result of research by our Maintenance Division and Laboratory, this Peat is converted into rich loam which results in considerable savings to the State.

IMPROVED ROADWAY SURFACING

The Department is contracting for a new and most economical method of correcting rippling or washboard surfaces on our highways. Previously, to correct this situation, the surfaces had to be removed and replaced. Under the new method, a machine which heats the surface of the road, planes it and irons out the wrinkles, with an end result in savings to the Commonwealth.

UNDERWATER BRIDGE INSPECTION

The Department's new and extensive use of divers making periodic checks on underwater bridge structures now eliminates the hazard of bridge collapse. These inspections result in preventive measures being taken on weaknesses not apparent from the surface, which were caused by floods, hurricanes and changes in channel alignment.

ROADSIDE MAINTENANCE

Mowing of our roadside areas is now done completely by competitive bidding. However, a long range program is now under way to sharply reduce the costs of roadside maintenance.
The roadside areas are being planted with fifty species of hardy seedlings, shrubs, ground covers, natural sods and trees. Although economy is the prime

GENERAL AND SPECIAL PROGRAMS

ROADSIDE MAINTENANCE, CONTINUED

factor in this program, the result will not only be economic but also will beautify the landscape.

EDUCATION

During the Fall of 1958, a Mathematics Course was instituted by the Department for Survey personnel, to increase their general knowledge of mathematics particularly as applied to surveying problems. The course is primarily open to men working in Survey field parties and is on a voluntary basis, each man taking the course on his own time. Two courses were scheduled for a total of twenty-six weeks with an examination at the conclusion to indicate each student's progress. Both groups are given numerous practical surveying problems as well as basic mathematics both in class and in outside assignments. The purpose of this educational program is to privide within the structure of the Department a nucleus of trained engineering personnel.

CONTRACT MAINTENANCE

One phase of snow and ice control work which must be performed at the end of each winter is the removal of the winter sand accumulation along the edges of the pavement. This work in the past has always been performed by the Department Maintenance Personnel. This year for the first time nine pilot contracts for the cleaning of the sand were let. The results show that the contract method is more economical and work is completed in a shorter period of time. This year is the first in the Department's history that all mowing is being accomplished by the contract method.

MANUALS

Prior to September 12, 1957, no Manuals had been printed since 1927. Manuals in highway construction are a necessity to coordinate programs.

Seven Manuals have been recently completed. They are: Instructions for Resident Engineers; Black Book Standards for Resident Engineers; Department Standards; Instructions for Location Surveys; Right of Way Manual; Design; Maintenance.

Three more are being prepared to cover Materials, Traffic and Bridges.

The Manuals provide for uniform policies and instructions regarding the preparation and completion of all classes of State highways and Federally-aided roads.

The Manuals also describe methods, standards and estimating procedures acceptable to the Federal Bureau of Roads and the American Association of State Highway Officials. In general, the books set forth all the proceedures to be followed for the economic and efficient construction of a highway from its inception of the tentative route to the final construction plans and estimates.

GENERAL AND SPECIAL PROGRAMS

MANAGEMENT IMPROVEMENT PROGRAM

In compliance with Your Excellency's Management Improvement Program, the nationally recognized management firm of Stone and Webster has undertaken a study for the purpose of recommending new business-like methods designed for the Department to obtain maximum efficiency. This review is an entirely different concept of any previous personnel review of State agencies.

This management survey is being made:

To study the existing organization structure of the State Highway Department and to recommend changes, if any, required to achieve results in anticipation of the projected highway program for the next decade:

To review the duties and responsibilities of all personnel, existing lines of authority and to recommend changes, if any:

To review present job specifications and recommend needed changes, if any:

To review present departmental cost accounting and budgetary control procedures and reporting, relative to operations, maintenance, and construction and to recommend changes, if any:

To provide supervisory staff with necessary cost information to gauge efficiency of the various functions and improved methods for the substantiation of budget requests:

To review the operations of the department as they relate to other state departments and governmental agencies and such other matters as may affect the strengthening and may improve the operation of the Department of Public Works.

To review present methods and procedures and to recommend advisable changes that will improve efficiency or provide economies:

GENERAL AND SPECIAL PROGRAMS

SNOW AND ICE CONTROL SECTION

The "Bare Roads" policy under which the Department conducts its winter highway maintenance program is designed to provide the ultimate in safety for the motoring public.

As the result of a review of the expenditures over past years for this important phase of highway maintenance and, in the interest of efficiency and economy, the Department recently established a Snow and Ice Control Section within the Maintenance Division.

This section will have units within each of the seven district offices to expedite this important program.

The Snow and Ice Control Program is not confined to operations during winter months alone, but requires year around planning.

The planning includes the purchase, storage and protection of materials and the maintenance of the Department's snowfighting fleet.

Having pioneered in contract maintenance, this section will have the responsibility of refining the specifications for inclusion in future contracts for Spring cleanup of sand. The experience gained from our pilot contract program conducted in last Spring's highway and catchbasin cleaning of Winter's accumulation of sand and debris will form the basis for improving and expanding this type of work in the future. With improved specifications, we believe lower bid prices will result which will effect greater economy in this contract maintenance work.

This section will provide the data for formulating policy for the improvement of this important program. Already under way is a comprehensive study of winter maintenance programs and procedures conducted by states in the snow belt area. This interchange of methods, ideas and policies with other states faced with similar snow and ice control problems will provide the employment of the best possible means available for Massachusetts motorists' operational safety on highways in winter months.

This section will provide continuity in the training of employees by conducting annual training programs in the various phases of equipment handling and use of materials for snow and ice control.

In former years, control of snow and ice on two, three and four lane highways could be handled quickly and effectively. Today, however, with multilane divided highways, the problem becomes more complex and rigid training is required to provide bare highways rapidly to meet public demand. This demand the Department intends to meet now and in the future through the continuing and improved efforts of the Snow and Ice Control Section.

GENERAL AND SPECIAL PROGRAMS

HIGHWAY ENGINEERING RESEARCH

The Department has arranged to expand its study of Highway Engineering Research conducted by the Massachusetts Institute of Technology under the sponsorship of this Department and the U. S. Bureau of Public Roads.

The Highway Engineering Research Project will make extensive utilization of the accomplishments developed under the current contract for research in the field of conserving engineering manpower through the use of photogrammetry in association with automatic instrumentation and electronic computers.

This research program is being expanded to develop a system of programs for economic analysis, construction and operation of highway facilities, utilizing modern methods of data procurement, data processing and data presentation.

The research project has developed many programs to be used in the electronic computer such as the development of design, traffic analysis, route selection and cost estimates.

The Department has benefitted greatly by modern technical research programs in that we have been able to obtain more economical highway designs resulting in more economical use of our engineering force.

The value of the program is borne out by the fact that over twenty states and several foreign countries have been furnished with program data developed under this research effort.

Even though great progress has been made in certain phases of highway engineering, we are convinced that even greater progress can be made along these and other phases.

The results of the research are being made available as they are developed during the contract period, in a series of reports and computer programs.

This research program has helped to make the Commonwealth of Massachusetts one of the leaders in the development and utilization of modern techniques in highway engineering.

waterways
and
beaches

WATERWAYS

MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS

DIVISION OF WATERWAYS

****

The functions and duties of the Division of Waterways are to prepare plans and undertake shore protective, harbor development, stream clearance and flood control work. Coordinating agency on Federal harbor development and flood control projects. In charge of Commonwealth flats, tidelands, tidewaters, Great Ponds and public rights in certain streams. Furnishes hydraulic data to Highway Division for use in drainage and bridge design. Maintains and operates certain state lands, public beaches and state piers. Inspects and maintains state boundary markers; Removes dead mammals from shores.

WATERWAYS

Shore protection is one of the major duties of the Waterways Division.

WATERWAYS

PROJECTS UNDERTAKEN BY THE DIVISION OF WATERWAYS

FROM OCTOBER 1, 19S8 TO DATE

CONTRACT NUMBER	TOWN	LOCATION	TYPE OF WORK	ESTIMATED COST
1946	Chatham	Forest Beach Rd.	Shore Protection	$ 17,950
1953	Winthrop	Grand View Avenue	Stone Mound Const.	1S,500
19S9	Rockport	Long Beach	Shore Protection	22S,000
1952	New Bedford	Rodney French Blvd. (East)	Shore Development	113,845
1964	Hingham	Hingham Harbor	Dredging Harbor Improvements	8S,300
1960	Beverly	Vic. of Abbot St.	Shore Protection	13,S45
1966	Holyoke	Connecticut River	Bank Protection	17,500
18S2	Quincy	Homestead & Braintree Avenues	Shore Protection	10,600
1935	Gloucester	Wooson's Cove	Shore Protection	17,870
1973	Wellfleet	Wellfleet Harbor	Harbor Improvements	169,61S
195S	Weymouth	Wessagussett Beach	Beach Improvements	S2,96S
1971	Newburyport	Water Street	Seawall Construction	26,400
1970	Marblehead	Various	Shore Protection	17,260
1913	Lunenburg & Leominster	Lake Whalom	Shore Protection	82,66S
1980	Sandwich	Town Neck & Spring Hill Beaches	Shore Protection	26,020
1979	Barnstable	Seapuit River	Dredging	$ 49,864
197S	Wellfleet	Wellfleet Harbor	Harbor Improvements	176,07S
1920	Marlborough	Maple St. Brook	Stream Improvements	44,886
198S	Gloucester	Gloucester Inner Harbor	Dredging	28,761
1989	Scituate	Scituate Harbor	Dredging North Basin	114,140
1977	Wellfleet	Wellfleet Harbor	Harbor Improvements	S7,749
1991	Newburyport	Water Street	Seawall Construction	22,87S
1965	Hull	Sunset Point	Shore Protection	20,280
1846	Hadley	Connecticut River	Bank Protection	42,700
1992	Cohasset	Bailey's Creek	Dredging	96,730
1984	Lee	Housatonic River	Wall Repairs	2,392
1983	Orange	Miller's River	Wall Repairs	1,990
19S6	Hingham	Crow Point	Shore Protection	9,300
1912	Plymouth	Town Wharf	Wharf Construction	76,898
2001	Hingham	Hingham Harbor	Dredging Basin	226,600
1994	Yarmouth	Chase Garden Beach	Beach Improvements	13,S60
1962	Quincy	Squantum Section	Shore Protection	32,720
1954	Scituate	Third Cliff	Shore Protection	28,863
199S	Harwich	Red River Beach	Shore Protection	31,933
1999	Salem	Salem Willow & Forest River Park	Seawall Construction & Tidal Control Structures	$ 26,920
1998	Salem	Various	Shore Protection	38,810
1886	Danvers	Crane Brook	Stream Improvement	64,172
2011	Hardwick	Ware River	Flood Gate Repairs	3,542
2012	Wareham & Bourne	Buttermilk Bay	Dredging	25,906
1939	Hanover	Iron Nine Brook	Channel Improvement	7,648
1990	Scituate	Sand Hills	Seawall Construction	17,S60
1986	Hull	Pemberton Section	Seawall Reconstruction	8,379
2010	Brewster	Point of Rocks Road	Stone Revetment Const.	3,824
2018	Fairhaven	West Island Causway	Concrete Bridge	39,480
2016	Revere	Point of Pines Y.C.	Dredging	22,369
2013	Newbury	Plum Island	Jetty Construction	23,687
1908	Ludlow	Alden Pond	Reconstruction of Spillway	28,050
19S7	Scituate	Glades Road	Seawall Construction	12,93S
2026	Tisbury	Lake Tashmoo	Dredging	29,7S2
200S	Lee	Greenwater Brook	Stone Revetment Const.	3,43S
1942	Holland	Hamilton Reservoir	Dam Reconstruction	47,49S
2027	Leicester	Greenville Dam	Dam Repairs	S1,800
2024	Eastham	Rock Harbor	Excavation & Mooring Facilities	16,474
1923	Quincy	Vic. of Shalton Road	Seawall Construction & Miscellaneous Work	$ 17,910
2037	Dudley & Webster	French River	Spillway Removal	S,S70
2036	Plymouth	Priscilla Beach	Stone Revetment Const.	2,079
2033	Plymouth	Long Beach	Seawall Construction & Miscellaneous Work	13,632
2038	Wareham	Buttermilk Bay	Dredging & Beach Restoration	33,600
2039	Truro	Pond Village	Dredging	39,30C
			Total	$2,604,421

BEACHES

The beach program is designed to make a family day a healthy, safe and enjoyable occasion not only for Massachusetts residents but also for touring guests.

The safety record at the four State Beaches is excellent. No drownings have occurred to date. We believe it is attributable to the high standards of training of personnel. Before a lifeguard is appointed, a practical test as well as a written examination on surf rescue must be passed. This includes the use of ring and torpedo buoys, reels and land lines, the resuscitator and surfboards. For additional safety, lifeguard towers are provided with a telephone system controlled at a central switchboard in the Administration Building at each beach. A special radio emergency service provides a two-way radio system for additional safety. Registered nurses are employed for emergency treatment at each beach.

BEACHES

The past year has seen greater use of our public ocean beaches which are operated and maintained by the Department.

The four developed reservations at Salisbury Beach, Salisbury, Scusset Beach, Sandwich, Horseneck Beach, Westport, and Provinctown Bathouse on the Province lands, are attracting larger numbers as reflected by receipts from parking areas, bath house facilities and refreshment concessions.

Projects for improving these beaches including improved communication facilities for lifeguards, improvements to First Aid facilities, winterizing of buildings, improving access roads, parking areas, and walks or concourses for beach patrons have been completed or started.

Long-range plans are being developed for added facilities or improvements to accommodate the increasing numbers of people who will be using the beaches in years to come.

The safety record at the four beaches is excellent. No drownings have occurred to date on the State-managed beaches, which is indicative of the high standards employed in the selection and training of employees.

As time passes, a greater amount of routine maintenance is required to combat the ravages of salt air and extreme winter conditions which exist at the beach sites.

Attention is being given to preventive maintenance procedures which will eliminate more costly repairs at a later date.

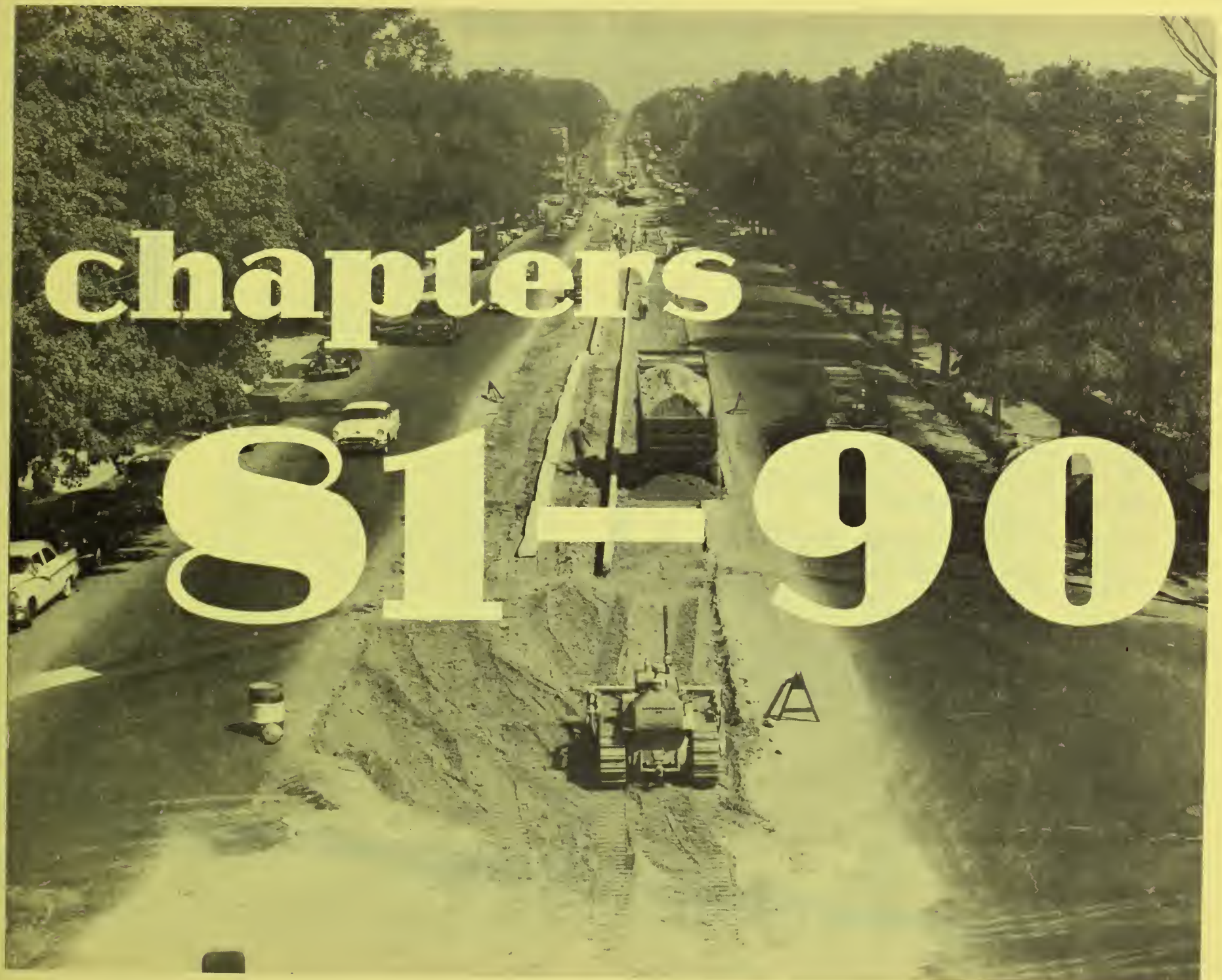
The water safety program, acclaimed to be one of the finest in the United States, requires our life grards to meet the highest standards.

Life guard towers are connected by an underground telephone communication system to a central switchboard located in the Administration Building at each beach.

Swimming instructors teach youngsters the fundamentals of swimming.

A special radio emergency service licensed by the Federal Communications System provides a two-way walkie, talkie communication for additional safety. Registered Nurses are employed for emergency treatment at each of the beaches.

The beach program is designed to make a family day a healthy, safe and happy occasion not only for Massachusetts residents but as an attraction for tourists.


chapters
81-90

STATE AID PROGRAM

Chapter 81

Chaptsr 81 of the General Laws provides for the expenditure of funds for the repair and improvement of public ways, other than State highways, in towns having a valuation under $5,000,000 and a road mileage ratio of less than twelve.

The road mileage ratio is determined by dividing the proportionate part of the State tax per million by the number of miles of public ways, exclusive of State highways, in each town. The State appropriates $275.00 per mile and the town contributes from $15.00 per mile as a minimum to $150.00 per mile as a maximum based on the road mileage ratio.

The amounts appropriated by the State and contributed by the town is expended under the direction of the Department of Public Works on such public ways as the Department and Selectmen may agree.

The cost of snow removal and sanding on Chapter 81 roads in any town including amounts paid as rental for trucks and other equipment, and, at approved hourly rental rates may be paid from the amounts so appropriated and contributed, at the rate of not more than $75.00 per mile.

There are 9554 miles of town ways located in 182 towns eligible for Chapter 81 expenditures. The work consists of patching, widening, reshaping or surfacing with gravel or other suitable material and also surface treating with bituminous materials.

When the work is completed, the Department of Public Works pays to the town a percentage of the value of the work, based on the actual cost of labor not to exceed prices paid by the Department to its employees for similar operations, and for materials incorporated in the work, and the rental of equipment in accordance with approved schedules.

The Chapter 81 Program for the current fiscal year amounts to $3,441,860.00.

Chapter 90

Section 34 of Chapter 90 of the General Laws provides for making some of the Highway Fund available for expenditure, under the direction of the Department of Public Works, for maintaining, repairing, improving, and constructing Town and County highways, together with any money which any Town and County may appropriate for said purpose to be used on the same highway.

In the distribution of State funds, the Department sets up a quota for each County, which is based on population, mileage of Town ways and area; the formula currently being used gives a 40% weight to population, 40% to mileage and a 20% weight to area. This formula is also used as a guide to determine the amount to be set up for each City or Town.

Normally, the Department contributes one-half the cost of construction on projects eligible for Chapter 90 participation with each municipality contributing one-quarter of the balance. Maintenance allotments are set up on a one-third basis; that is, with the State, County and Town each paying one-third of the cost.

A breakdown of the current program, which is supervised by the State Aid Section of the Department, is shown on the following pages.

STATE AID PROGRAM

STATE AID CHAPTER 90 PROGRAM
SUMMARY OF PROJECTS - SEPT. 1958 TO SEPT. 1959

COUNTY	STATE FUNDS	TOWN FUNDS	COUNTY FUNDS	TOTAL FUNDS
Barnstable	$ 218,000	$ 109,000	$ 105,000	$ 432,000
Berkshire	249,900	117,950	114,450	482,300
Bristol	497,000	246,000	246,000	989,000
Dukes	45,000	12,500	17,500	75,000
Essex	339,350	133,975	156,875	630,200
Franklin	155,500	86,350	51,600	293,450
Hampden	408,600	191,300	194,300	794,200
Hampshire	92,300	46,950	37,650	176,900
Middlesex	730,860	394,570	323,570	1,449,000
Nantucket	---	---	---	---
Norfolk	391,900	177,200	177,200	746,300
Plymouth	179,800	86,850	84,850	351,500
Suffolk	275,550	191,550	---	467,100
Worcester	578,050	290,775	290,775	1,159,600
Statewide Maintenance	412,650	433,500	387,750	1,233,900
Totals	$4,574,460	$2,518,470	$2,187,520	$9,280,450

STATE AID PROGRAM

STATE AID CHAPTER 90 PROGRAM
SUMMARY OF PROJECTS - SEPT. 1958 TO SEPT. 1959

BARNSTABLE COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Barostable	Bearses Wey & Creigville Beech Rd.	$ 20,000	$ 10,000	$ 10,000	$ 40,000
Brewster	Setucket Rd.	8,000	4,000	4,000	16,000
Chetham	Crowell, Queeo Ano & Oyster Pond Furlong Rds.	18,000	9,000	9,000	36,000
Denois	Divisioo & Inmeo Sts., Chese Ave. & Upper Couoty Rd.	30,000	15,000	15,000	60,000
Falmooth	Jooes Rd. & Worcester Conrt East	40,000	20,000	20,000	80,000
Herwich	Pleeseot Lake & Lower Conoty Rds.	45,000	21,000	18,000	84,000
Orleans	Old Colony Wey	7,500	4,500	4,000	16,000
Orleeos	Old Colooy Wey	17,500	9,500	9,000	36,000
Truro	Kiog's Hwy.	6,000	3,000	3,000	12,000
Wellfleet	Oceen View Drive	10,000	5,000	5,000	20,000
Yermonth	Stetioo Ave. & Uoion St.	16,000	8,000	8,000	32,000
Totals		$218,000	$109,000	$105,000	$432,000

BERKSHIRE COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Adems	Friend St.	$ 11,000	$ 5,500	$ 5,500	$ 22,000
Alford	East St. & No. Egremont Rd.	2,400	1,200	1,200	4,800
Chesbire	Seod Mill Rd.	6,350	3,175	3,175	12,700
Clarksburg	Middle Rd.	2,600	1,300	1,300	5,200
Dalton	Soutb St.	9,000	4,500	4,500	18,000
Egremoot	Boice Rd.	4,000	2,000	2,000	8,000
Florida	Tilde Hill Rd.	20,000	10,000	10,000	40,000
Gt. Berringtoo	Perk St.	11,000	5,500	5,500	22,000
" "	Cottege & Perk Sts.	14,000	7,000	7,000	28,000
Hinsdele	Robinsoo Rd.	6,000	3,000	3,000	12,000
Lee	Tyringhem Rd.	10,000	5,000	5,000	20,000
Lenox	East St.	7,100	3,550	3,550	14,200
Mt. Washington	East St.	3,000	1,500	1,500	6,000
New Ashford	Ingreham Rd.	1,000	500	500	2,000
New Marlborough	Norfolk Rd.	12,000	6,000	6,000	24,000
No. Adams	Eagle & River Sts.	12,000	4,000	4,000	20,000
Otis	Ed Jones Rd. Bridge	4,000	5,000	1,500	10,500
Pittsfield	Pecks Rd.	9,500	4,750	4,750	19,000
Pittsfield	Pecks Rd.	40,000	20,000	20,000	80,000
Richmood	Sweamp Rd.	4,650	2,325	2,325	9,300

BERKSHIRE COUNTY (CONT.)

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Sevoy	Chepel Rd.	$ 4,000	$ 2,000	$ 2,000	$ 8,000
Sevoy	Center & Chepel Rd.	8,000	4,000	4,000	16,000
Sevoy	Floride Rd.	4,000	----	----	4,000
Sheffield	Egremont Rd.	18,000	6,000	6,000	30,000
Sheffield	SO. Egremont Rd. Bridge	18,000	6,000	6,000	30,000
Tyringhem	Main Rd.	4,000	2,000	2,000	8,000
W. Stockbridge	Cobb Rd.	4,300	2,150	2,150	8,600
Totels		$249,900	$117,950	$114,450	$482,300

BRISTOL COUNTY

Acusoet	Mein St. Bridge	$ 10,000	$ 5,000	$ 5,000	$ 20,000
Attleboro	Sterkey Ave. & Holden St. Bridge	27,000	13,500	13,500	54,000
Berkley	North Mein St.	5,000	2,500	2,500	10,000
Berkley	North Meio St.	16,000	8,000	8,000	32,000
Dighton	Elm St.	20,000	10,000	10,000	40,000
Feirheven	Sconticut Neck Rd.	12,000	6,000	6,000	24,000
Fell River	Rhode Islend Ave,, Ext.	108,000	54,000	54,000	216,000
Fell River	Durfee & Union Sts.	85,000	42,500	42,500	170,000
Freetowo	Locust St. Bridge	5,000	2,500	2,500	10,000
Mansfield	Elm St. & School St. Cut-off	$ 20,000	$ 10,000	$ 10,000	$ 40,000
New Bedford	Terkiln Hill Rd.	6,000	3,000	3,000	12,000
New Bedford	Church St.	46,000	23,000	23,000	92,000
North Attleborough	No. & So. Washington & Elm Sts.	22,000	11,000	11,000	44,000
Norton	Newleod St.	10,000	5,000	5,000	20,000
Rehoboth	Providence St.	20,000	10,000	10,000	40,000
Teunton	Hert St.	13,000	6,500	6,500	26,000
Teunton	Coort, Summer & County St.	15,000	5,000	5,000	25,000
Teunton	West Britenoie & Bey Sts.	17,000	8,500	8,500	34,000
Westport	Ademsville Rd.	40,000	20,000	20,000	80,000
Totals		$497,000	$246,000	$246,000	$989,000

DUKES COUNTY

Chilmerk	Middle Rd.	$ 4,000	$ 2,000	$ 2,000	$ 8,000
Edgertown	Meio St.	6,000	3,000	3,000	12,000
Gey Heed	Moshope Treil	20,000	----	5,000	25,000
Tisbury	Feirfield Ave.	6,000	3,000	3,000	12,000
Tisbury	Lembert's Cove Rd., Feirfield Ave. & Mein St.	4,000	2,000	2,000	8,000
West Tisbury	Lembert's Cove Rd.	5,000	2,500	2,500	10,000
Totels		$ 45,000	$ 12,500	$ 17,500	$ 75,000

STATE AID PROGRAM

ESSEX COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Amesbury	Essex - Merrimac Bridge Painting	$ 6,500	$ ----	$ 6,500	$ 13,000
Andover	Andover St. Bridge	21,000	7,000	7,000	35,000
Andover	Shawsheen Rd.	20,000	----	----	20,000
Beverly	Lothrop & McKay Sts.	22,000	11,000	11,000	44,000
Boxford	Main St.	1,000	500	500	2,000
Essex	Southern Ave.	12,200	4,900	4,900	22,000
Georgetown	Andover St.	20,300	7,600	7,600	35,500
Haverhill	Salem St.	11,000	5,500	5,500	22,000
Haverhill-Groveland	Salem St.	11,000	5,500	5,500	22,000
Ipswich	Jeffray's Neck Rd.	22,750	11,375	11,375	45,500
Lawrence	Duck Bridge Painting	17,000	----	17,000	34,000
Lynn	Den Quarry Rd.	18,000	9,000	9,000	36,000
Lynnfield	Walnut St.	7,000	3,500	3,500	14,000
Marblehead	Lafayette St.	12,000	6,000	6,000	24,000
Manchester	Lincoln St.	5,000	2,500	2,500	10,000
Manchester	Lincoln St.	9,000	4,500	4,500	18,000
Middleton	Forest St.	5,000	2,500	2,500	10,000
Nahant	Little Nahant Rd.	10,600	5,600	5,000	21,200
Newbury	Scotland Rd.	27,000	9,000	9,000	45,000
North Andover	Dale St.	32,500	16,250	16,250	65,000
Rowley	Haverhill St.	$ 9,000	$ 3,000	$ 3,000	$ 15,000
Salem	6 Streets	22,500	11,250	11,250	45,000
Salisbury	Congress St.	6,000	3,000	3,000	12,000
Wenham	Grapevine Rd.	6,000	2,000	2,000	10,000
West Newbury	Church St.	5,000	2,500	2,500	10,000
Totals		$339,350	$133,975	$156,875	$630,200

FRANKLIN COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Ashfield	Williamsburg Rd. & Watson Rd.	$ 9,000	$ 6,000	$ 3,000	$ 18,000
Bernardston	Keet's Brook Rd.	4,000	2,000	2,000	8,000
Buckland	Bray Rd.	7,000	3,500	3,500	14,000
Charlemont	South River Bend	6,000	3,000	3,000	12,000
Deerfield	West Deerfield Upper Rd.	5,000	2,500	2,500	10,000
Gill	West Gill Rd.	12,500	9,500	3,000	25,000
Greenfield	3 Roads & Beacon Rd. Bridges	21,000	18,000	3,000	42,000
Hawley	East Hawley Rd.	6,000	3,000	3,000	12,000
Leverett	Shutesbury Rd. Bridge	7,650	2,800	2,300	12,750
New Salem	North Main & West St.	3,000	1,500	1,500	6,000
Northfield	Gulf Rd. & Mt. Hermon Rd.	8,000	4,000	4,000	16,000

FRANKLIN COUNTY (CONT.)

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Northfield	Painting & Repairs Schell Bridge	$ 9,000	$ 4,000	$ 2,000	$ 15,000
Orange	No. Main St.	3,000	3,000	----	6,000
Rowe	Leshur's & Monroe Hill Rds.	22,000	6,000	4,000	32,000
Shelburne	Little Mohawk Rd.	7,000	3,500	3,500	14,000
Sunderland	No. Main St.	6,600	3,300	3,300	13,200
Warwick	Northfield Rd.	4,250	3,500	750	8,500
Wendell	Miller's Falls Rd.	5,000	2,500	2,500	10,000
Whately	River Road	5,500	2,750	2,750	11,000
Warwick	Northfield Rd.	4,000	2,000	2,000	8,000
Totals		$155,500	$ 86,350	$ 51,600	$293,450

HAMPDEN COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Blandford	North Blandford Rd.	$ 8,000	$ 2,500	$ 4,500	$ 15,000
Chicopee	North & South Hwy.	2,550	----	----	2,550
Chicopee	Fuller Rd.	30,000	15,000	15,000	60,000
East Longmeadow	Shaker Rd.	7,800	3,900	3,900	15,600
Hampden	Main St. & Chapin Rd.	7,000	3,500	3,500	14,000
Holland	Stafford Rd.	4,000	2,000	2,000	8,000
Holyoke	Southampton Rd.	10,000	5,000	5,000	20,000
Holyoke	Apremont Hwy. & Beech St.	$ 36,000	$ 12,000	$ 12,000	$ 60,000
Ludlow	Chapin St.	4,000	----	----	4,000
Monson	Hampden Upper Rd.	12,400	6,200	6,200	24,800
Montgomery	Main Rd.	4,000	1,500	2,500	8,000
Palmer	Belchertown Rd.	16,000	8,000	8,000	32,000
Russel	Old Westfield Rd. & Pine Hill Rd.	3,000	1,500	1,500	6,000
Springfield	Allen St.	57,500	28,750	28,750	115,000
Springfield	Bradley Rd.	100,000	50,000	50,000	200,000
Tolland	New Boston Rd.	10,350	3,450	3,450	17,250
West Springfield	Dewey St.	32,000	16,000	16,000	64,000
West Springfield	Dewey St.	11,000	5,500	5,500	22,000
Westfield	Union St.	11,000	5,500	5,500	22,000
Westfield	Church St.	5,000	2,500	2,500	10,000
Westfield	Union St.	37,000	18,500	18,500	74,000
Totals		$408,600	$191,300	$194,300	$794,200

HAMPSHIRE COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Chesterfield	Robert's Meadow Rd. & Cummington Rd.	$ 10,500	$ 5,750	$ 4,750	$ 21,000
Easthampton	Adams St.	3,200	800	----	4,000

STATE AID PROGRAM

HAMPSHIRE COUNTY (CONT.)

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Hatfield	Chestnut St. Bridge	$ 12,500	$ 11,500	$ 1,000	$ 25,000
Huntington	County & Pisseh Rds.	S,000	2,500	2,500	10,000
Huntington	County Rd.	8,000	4,000	4,000	16,000
Middlefield	East River Road	2,000	1,000	1,000	4,000
Northampton	Main St.	20,200	14,100	14,100	S6,400
Westhampton	Main Rd.	6,900	2,300	2,300	11,500
Worthington	Old Post Rd. & West Worthington Rd.	10,000	S,000	S,000	20,000
Worthington	Fairground Rd.	6,000	----	3,000	9,000
Totals		$ 92,300	$ 46,950	$ 37,650	$176,900

MIDDLESEX COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Arlington	Pleasant St.	$ 23,000	$ 11,500	$ 11,500	$ 46,000
Billerica	Treble Cove Rd.	65,500	28,250	28,250	122,000
Cambridge	6 Streets	62,500	31,250	31,250	125,000
Cambridge	Mt. Auburn St.	18,000	9,000	9,000	36,000
Carlisle	Concord Rd.	S,000	2,500	2,500	10,000
Groton	Elm St. & W. Groton Rd.	29,500	14,750	14,750	S9,000
Holliston	Washington St.	65,360	10,320	10,320	86,000
Hopkinton	E. Main St.	12,000	6,000	6,000	24,000
Hudson	Cox St.	11,000	S,500	S,500	22,000
Lincoln	Trapelo Rd.	$ 7,000	$ 3,500	$ 3,500	$ 14,000
Littleton	Goldsmith Rd.	7,000	3,500	3,500	14,000
Lowell	S Streets	26,500	13,250	13,250	53,000
Malden	Cross, Commercial & Exchange Sts.	22,000	11,000	11,000	44,000
Marlborough	Bolton St.	22,500	11,250	11,250	4S,000
Maynard	Main, Nason & Waltham Sts.	25,000	12,500	12,500	50,000
Melrose	West Wyoming Ave.	21,500	10,750	10,750	43,000
Newton - Needham	Nehenton & Kendrick Sts. Bridge	79,500	30,250	30,250	140,000
Pepperell	Nashua Rd.	12,500	6,250	6,250	2S,000
Sherborn	Main St.	8,500	4,250	4,250	17,000
Shirley	Lancaster Rd.	S,000	2,500	2,500	10,000
Somerville	1S Streets	118,000	53,500	S3,500	225,000
Sudbury	Old Sudbury Rd.	8,500	4,250	4,250	17,000
Tewksbury	Shawshaan Rd.	12,500	6,250	6,250	25,000
Townsend	Shirley & Fitchburg Rds.	12,000	6,000	6,000	24,000
Tyngsborough	Coburn Rd.	8,000	4,000	4,000	16,000
Westford	Groton Rd.	1S,000	7,500	7,500	30,000
Wilmington	Park & Lowell Sts.	12,000	6,000	6,000	24,000
Winchester	Johnson Rd.	16,000	79,000	8,000	103,000

MIDDLESEX COUNTY (CONT.)

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Totals		$730,860	$394,S70	$323,S70	$1,449,000

NORFOLK COUNTY

Braintree	Union St.	$ 35,100	$ 17,550	$ 17,550	$ 70,200
Brooklinc	Beacon St.	12,000	6,000	6,000	24,000
Brookline	6 Streets	40,000	20,000	20,000	80,000
Canton	Randolph St.	11,000	S,500	S,500	22,000
Cohasset	Riplay Rd.	6,400	3,200	3,200	12,800
Dedham	Milton St.	8,000	4,000	4,000	16,000
Dover	Canter St.	6,000	3,000	3,000	12,000
Foxborough	East St.	30,000	1S,000	1S,000	60,000
Medfield	High St.	16,500	7,250	7,250	31,000
Norwood	Dean St.	25,500	12,750	12,750	51,000
Norwood	Naponset	1S,000	7,500	7,500	30,000
Quincy	Canal St. & Revere Rd.	7S,000	2S,000	25,000	125,000
Randolph	Intersection of 4 Streets	9,000	4,500	4,500	18,000
Sharon	Bay Road	9,400	4,700	4,700	18,800
Stroughton	Central St.	3,500	1,750	1,750	7,000
Wellesley	Washington St.	S1,500	20,500	20,500	92,500
Wellesley	Washington St.	3,000	1,500	1,500	6,000
Weymouth	Pleasant St.	$ 29,000	$ 14,500	$ 14,500	$ 58,000
Wrentham	Shears St.	6,000	3,000	3,000	12,000
Totals		$391,900	$177,200	$177,200	$746,300

PLYMOUTH COUNTY

Abington	Thicket St.	$ 2,000	$ 1,000	$ 1,000	$ 4,000
East Bridgewater	Washington St.	8,000	4,000	4,000	16,000
Halifax	Plymouth St.	9,600	3,200	3,200	16,000
Hanover	Elm St.	9,000	4,500	4,500	18,000
Hingham	Main St.	10,000	S,000	S,000	20,000
Hingham	Ward & Cushing St.	4,000	2,000	2,000	8,000
Hull	Spring & Main Sts.	12,000	4,000	4,000	20,000
Lakeville	Malbone St.	8,000	7,000	S,000	20,000
Marion	Front St.	14,000	7,000	7,000	28,000
Mattapoisett	Marion Rd.	2,500	----	----	2,500
Middleborough	North Main & East Main Sts.	20,000	10,000	10,000	40,000
Pembroke	School St.	7,200	2,400	2,400	12,000
Pembroke	Oldham & Baker Sts.	4,000	2,000	2,000	8,000
Plymouth	Bever Dam & White Horse Rds.	13,500	6,750	6,750	27,000

STATE AID PROGRAM

PLYMOUTH COUNTY (CONT.)

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Plymouth	South St.	$ 15,000	$ 7,500	$ 7,500	$ 30,000
Rockland	Plain St.	8,000	4,000	4,000	16,000
Scituate	Gannett & Bever Dam Rds.	13,000	6,500	6,500	26,000
Wareham	Swift's Beach	12,000	6,000	6,000	24,000
Whitman	Auburn St.	4,000	2,000	2,000	8,000
Whitman	Plymouth St.	4,000	2,000	2,000	8,000
Totals		$179,800	$ 86,850	$ 84,850	$351,500

SUFFOLK COUNTY

Boston	Mass. Ave., Southampton & Albany Sts.	$ 26,600	$ 11,400	$ ----	$ 38,000
Boston	Dorchester Ave.	56,400	56,400	----	112,800
Boston	Baker St.	50,900	50,900	----	101,800
Boston	Columbus Ave.	56,000	56,000	----	112,000
Chelsea	Summit & Warren Ave.	77,400	8,600	----	86,000
Winthrop	Crest Ave.	8,250	8,250	----	16,500
Totals		$275,550	$191,550	$ ----	$467,100

WORCESTER COUNTY

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Athol	West Royalston Rd.	$ 6,000	$ 3,000	$ 3,000	$ 12,000
Auburn	Auburn St.	14,000	7,000	7,000	28,000
Berre	Williamsville Rd.	3,000	1,500	1,500	6,000
Blackstone	Blackstone St.	3,000	1,500	1,500	6,000
Boylston	Central St.	4,300	2,150	2,150	8,600
Clinton	High St.	10,000	5,000	5,000	20,000
Dudley	Oxford Ave.	12,000	6,000	6,000	24,000
Fitchburg	Electric Ave.	15,000	7,500	7,500	30,000
Fitchburg	John Fitch Hwy.	46,500	23,250	23,250	93,000
Fitchburg	John Fitch Hwy.	11,500	5,750	5,750	23,000
Hardwick	Lower Gilbertville Rd.	12,000	6,000	6,000	24,000
Hardwick	Lower Rd.	12,000	6,000	6,000	24,000
Harvard	Stillriver Rd.	5,000	2,500	2,500	10,000
Harvard	Lancaster County Rd.	2,000	1,000	1,000	4,000
Hopedale	Dutcher St.	12,000	6,000	6,000	24,000
Hopedale	Dutcher St.	10,000	5,000	5,000	20,000
Lancaster	Center Rd. Bridge Repairs	3,500	3,500	3,500	10,500
Lancaster	Main St.	22,900	11,450	11,450	45,800
Leicester	Marshall St.	6,000	3,000	3,000	12,000
Lunenburg	Main St. & West Townsend Rd.	12,000	6,000	6,000	24,000

WORCESTER COUNTY (CONT.)

TOWN	ROAD	STATE	TOWN	COUNTY	TOTAL FUNDS
Mendon	North Ave.	$ 4,600	$ 2,300	$ 2,300	$ 9,200
Milford	Main St.	15,000	7,500	7,500	30,000
Millbury	West Main St.	8,400	4,200	4,200	16,800
Millville	Quaker St.	8,000	4,000	4,000	16,000
Northborough	Whitney St.	5,000	2,500	2,500	10,000
Northbridge	Quaker St.	12,000	6,000	6,000	24,000
Oakham	Spencer Rd.	5,200	2,600	2,600	10,400
Oakham	South & Spencer Rds.	6,000	3,000	3,000	12,000
Phillipston	Barre Rd.	4,000	2,000	2,000	8,000
Paxton	West St.	5,000	2,500	2,500	10,000
Princeton	Worcester Rd.	6,000	3,000	3,000	12,000
Princeton	Worcester Rd.	6,000	3,000	3,000	12,000
Royalston	No. Fitzwilliams Rd. Bridge	8,000	4,000	4,000	16,000
Shrewsbury	Grafton St.	14,000	7,000	7,000	28,000
Southbridge	Pleasant St.	36,750	18,375	18,375	73,500
Southbridge	Mechanic St.	4,500	2,250	2,250	9,000
Southbridge	Pleasant St.	18,000	9,000	9,000	36,000
Spencer	Meadow St.	10,000	5,000	5,000	20,000
Sutton	Whitin Rd.	9,000	4,500	4,500	18,000
Templeton	Winchendon Rd. & Depot St.	12,500	6,250	6,250	25,000
Upton	Pleasant St.	$ 8,000	$ 4,000	$ 4,000	$ 16,000
Uxbridge	Douglas St.	16,000	8,000	8,000	32,000
Uxbridge	Quaker Rd.	1,400	700	700	2,800
Webster	Lake St.	13,000	6,500	6,500	26,000
Westborough	West Main St.	6,000	3,000	3,000	12,000
West Brookfield	Wickaboog Valley Rd.	5,000	2,500	2,500	10,000
West Brookfield	Long Hill Rd. Bridge	4,000	2,000	2,000	8,000
Westminster	Nichols St.	4,000	2,000	2,000	8,000
Worcester	Grove St.	27,000	13,500	13,500	54,000
Worcester	Lincoln St.	33,000	16,500	16,500	66,000
Worcester	Greenwood St.	40,000	20,000	20,000	80,000
Totals		$578,050	$290,775	$290,775	$1,159,600

VERMONT

NEW HAMPSHIRE

NEW YORK

ATLANTIC OCEAN

CONNECTICUT

RHODE ISLAND

North Adams
Greenfield
Athol.
Fitchburg
Lowell
Lawrence
Newburyport
Lynnfield
Gloucester
Lynn
BOSTON
Framingham
Quincy
Pittsfield
Cummington
Amherst
Lenox
Northampton
West Brookfield
Worcester
Holyoke
Warren
Springfield
Brimfield
Sturbridge
Sheffield
Provincetown
Brockton
Plymouth
Attleboro
Taunton
Middleboro
Fall River
New Bedford
Bourne
Falmouth
horseneck beach

MASS. TPK.

THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

STATE HIGHWAY CONSTRUCTION PROGRAM
SEPTEMBER 1959

ANTHONY N. DiNATALE, Commissioner
EDWARD J. McCARTHY, Chief Engineer

- COMPLETED
- UNDER CONSTRUCTION
- PROPOSED
- MASS. TURNPIKE
- INTERSTATE ROUTE

4M-8-59-926052